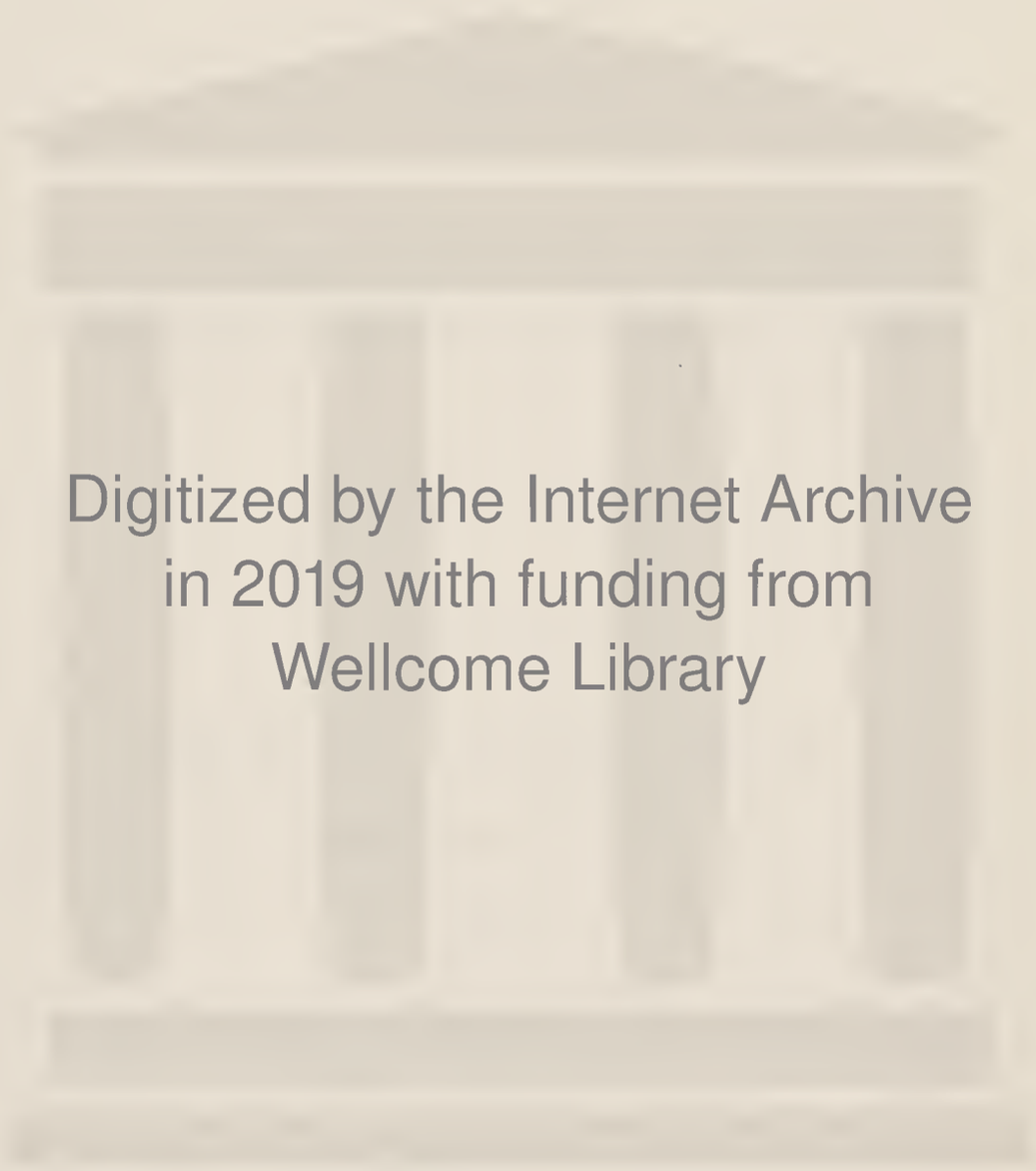
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THE

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EXHIBITING

A VIEW OF THE IMPROVEMENTS AND DISCOVERIES IN THE VARIOUS BRANCHES OF MEDICAL SCIENCE.

EDITED BY

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AND

AN ASSOCIATION OF PHYSICIANS AND SURGEONS.

Quærere verum.—HORACE.

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XVII.

SENSATION.

Animal Magnetism — Dr. Bertrand on Somnambulism — Peculiar Taste of Magnetized Water—Sacred Well of St. Medard — Convulsions produced by drinking its Water—Effects of Imagination, and a Magnetized Handkerchief—Magnetized Rings—Magnetized Trees, Paper, and Boxes—M. de Puysegur on the Influence of the Will—His Treatment of Patients—Singular Effects of a Visit to his House—Delenze on Magnetic Emanation—Georget on the necessity of Determined Attention in Magnetizing Patients—Contrary Opinion of Dr. Bertrand—Case in Point—Sound Sleep produced by Magnetism. —Origin of Animal Magnetism, Supported by Wirdig, Paracelsus, and Van Helmont — Magnetic Treatment of Wounds—Cure by Sympathy—Ointment made with a Human Skull—Magical Mode of producing Perspiration—Talismans and Enchantments — The Salt of Blood—The Lamp of Life—The Sympathetic Alphabet—Thouret on the Taliacotion Operation—Sympathy between a Nose at Brussels, and an Arm at Boulogna—Mesmer and Deslon —Life and Death of Taliacotius—Statue to his Memory, with a Nose in his Hand —Verses by Voltaire and Hudibras—French Commission of Inquiry—Bertholet and Laviosier—Nature and Extent of the Magnetic Fluid—Influence of the Celestial Bodies—Distribution, Propagation, and Augmentation of Magnetism—Flux and Reflux—Effects on the Animal Body—Influence on the Nerves—Analogy with the Loadstone—Opposite Poles—Accumulation, Concentration, and Transference of the Magnetic Fluid—Reflected by Glass—Bodies which Neutralize it—Its Application to Medicine—Mediate and Immediate Mode of curing Diseases—Magnetic Elixir of Immortality—Deslon, on the Existence, Nature, and Utility of Animal Magnetism—Apparatus—Magnetic Trough—Magnetic Chains—Magnetic Rod—Magnetized Piano Forte—Experiments with an Electrometer and a Needle—Magnetic Songs—Treatment of Patients—Singular Effects produced —Convulsions.

"The somnambulists," says Dr. Bertrand, "pretend that they detect in magnetized water a peculiar taste, which reveals to them the presence of the magnetic fluid. The counterpart of this marvellous circumstance is to be found among the convulsed votaries of St. Medard, with respect to the water of a well near the tomb of the celebrated Deacon Paris; and the heads of that sect cite a thousand observations to prove that the convulsionists recognise that water, not only by its taste, but by other remarkable effects, which they experience. I shall mention only one of these, which was that of a convulsionist, whom his brother could not deceive with holy water, substituted, unawares, for the water of the sacred well. With respect, however, to the direct experiments made with the view of ascertaining whether the somnambulists really discovered a peculiar taste in magnetised water, independently of all prepossessions, there is not one of all those which I have seen tried, with proper precautions, that has afforded positive results; and the proofs which magnetizers bring forward, are far from being more conclusive than those which the convulsionists furnish in favour of their well-water.

"The magnetizers adduce a thousand

facts to prove that magnetized objects have produced, on somnambulists, effects altogether independent of imagination; because these objects have been presented to them, without their being aware of their being impregnated with the magnetic fluid. What at first sight could be imagined more conclusive than the fact, that a young person was thrown into a state of somnambulism by means of a handkerchief magnetized at a distance of three hundred miles from the place where he dwelt? Nevertheless, this case proves nothing; for a handkerchief which was *not* magnetized, placed upon a patient in the same circumstances, produced the same effect.

"A magnetizer, obliged to remove from a distance from a person whom he is accustomed to somnambulize, and who pretends that he cannot sleep during his absence, takes a ring from his finger, and says,—'Take this ring; preserve it carefully; and put it on your finger at the hour when I have been accustomed to magnetize you. It will make you sleep half an hour every day.' The magnetizer departs; is absent for a fortnight; and, during all that time, the ring produces the effect that was foretold. This they explain by saying, that the ring had become saturated with fluid from the body of the magnetizer. About ten years ago, however, some magnetizers were obliged to admit the absurdity of the ideas generally entertained; and to allow that the imagination has a great share in bringing about the effects produced. It was only necessary for them to say to their patients, 'You will go and sit under such a tree; and you will fall asleep there for so long a time.' The patients did so; and the tree, although *not* impregnated with magnetic fluid, produced the same effect. Again, they said to them, 'You will fall into a state of somnambulism on tearing this paper,' or 'on opening this box;' and that which they predicted, did not fail to come to pass.

"A belief in the power of the will of the magnetizer, was introduced by M. de Puyseginru, 1784. He considered it to be the foundation of animal magnetism; and did not think it necessary to have recourse to any magnetic fluid. In his treatment of patients at Busancy, by the exercise of his will alone, he gave them power to sleep, on lying under a tree, or to wake by embracing it. But there is another fact which proves still more strongly to what point he carried his belief in the power of his will. Among the peasants who flocked to his house, often from a great distance, there were some who (their imaginations excited by all the wonders that were told of his treatment) did not need even to submit themselves to it in order to experience its effects, but fell into a state of somnambulism the instant they set out on the road to Busancy. This was attributed by M. de Puysegur to the determined will he had to cure all who resorted to him.

"I believe in an emanation from myself," says M. Delenze, "because the magnetic effects are produced without my actually touching the patient. I do not know the *nature* of this emanation, I know not whether it be *material* or *spiritual;* nor do I know to what distance it extends. But I know that it is sent forth and directed by my will; for when I cease to *will,* it ceases to *act.*" M. Georget is of the same opinion. "It is necessary that the two persons engaged in the operation, should direct their attention strongly and exclusively to the production of the phenomenon in question. Both the *magnetizer* and the *magnetized* should have the *intention* to produce somnambulism. Often when my thoughts were distracted by other matters, I could not produce any phenomenon; and when I thought the operation was completed, the patient opened his eyes, and told me he felt nothing."

Multiplied experiments have convinced Dr. Bertrand of the fallacy of all these notions. "A young person (about twenty years of age) had been subject, for four or five years, to very severe headaches, which, though not very frequent at first, soon recurred every week; and, during the last few months, several times a week, and with so much severity as to confine her to bed. At first I employed the means indicated by ordinary medicine, particularly foot-baths, bleeding, and leeches; but the relief they produced was hardly appreciable.* At last I resorted to magnetism.

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* So far as we can judge from the scanty particulars of this case, furnished by Dr. Bertrand, the treatment does not appear to be adapted to the occasion. It is not every case of headache (especially in a young female) that is benefitted by foot-baths, bleeding, and leeches. The subsequent history confirms this view. A case which required *depletion*, would not have been benefitted by *animal magnetism*.

First sitting.—The patient fell soundly asleep in seven or eight minutes; continued so for half an hour, and could not be awakened except by a loud voice. *Second sitting.*—Sleep came on some minutes sooner, and appeared to be still more profound. It ceased spontaneously about the same time as in the former instance. *Third sitting.*—Sleep came on in three minutes. There was no appearance of somnambulism. The pain in the head did not come on during the day, which surprised the patient, who was not accustomed to pass so long a space of time without an attack. Every time that the patient awoke from her profound slumbers, she complained of a violent pain in the head; but I removed it in a few minutes, by gestures. I continued the treatment for three weeks, at which time the sleep, which had all along been diminishing in length and intensity, ceased altogether. This insensibility to the action of magnetism, is considered by magnetizers as the indication of a perfect cure. I then discontinued the treatment; and, during six entire months, the patient was free from headache; but it has since returned, though less frequently and severely. In this case sleep was produced without any exertion of my *will* to that effect: and what necessity, therefore, is there to recur to that hypothesis?"

Animal magnetism, it seems, took its rise in the sixteenth century. Many distinguished men became its partisans; among whom may be mentioned Paracelsus and Van Helmont. Wirdig thus quaintly and strongly expresses himself. "All nature is magnetic. The whole world is supported by magnetism. All sublunary vicissitudes are caused by magnetism. Life is preserved by magnetism. The destruction of all things takes place by magnetism." Van Helmont wrote a work on the *Magnetic Treatment of Wounds.* The cure of wounds by persons at a distance, or *by sympathy,* as is was called, was also much in vogue. "It was sufficient to have the sword which had inflicted the wound, or a handkerchief dipped in the blood, to cure the patient at a distance; which was effected by the application, to the sword or the handkerchief, of an ointment proper to act through the medium of the magnetic fluid. They gave to this ointment the name of *Unguentum Armarium.* Its great virtue depended on the powder of a human scull, which they mixed up with some fatty body, in order to anoint the weapon which had inflicted the wound; and that sufficed to effect a cure; *provided* it was applied in proper *time,* that proper *care* was taken, and that the *wound was preserved from contact with the air.**

"This is not the only instance in which virtues have been ascribed to an insignificant remedy, which were really due to accessory circumstances. It was thus that, even in the eighteenth century, an admirable remedy was contrived for producing diaphoresis. It was sufficient to make a composition, into which entered the urine of the patient. In order, however, that the remedy might succeed, a precaution was to be taken, (*purely accessory,* but nevertheless *indispensable*). It consisted in placing the patient, well covered up, in a warm bed, and to administer, during the magic operation, several glasses of warm drink!

"The magnetic influence was not confined to the cure of wounds. It was employed in the formation of talismans and enchantments; and in the belief of its efficacy was founded the art of injuring by the excrements. The principal means of communicating at a distance were: 1. *The Salt of Blood;* a composition, into which entered the blood of the person at a distance, of whom it was wished to have intelligence. While the person remained well, this composition retained its bright red colour; but became dull on the occurrence of disease or death. 2. The *Lamp of Life;* which burned with a clear and brilliant flame, so long as the person who had furnished it was well; but which went out

* Fully to enter into the spirit of these manœuvres we should recollect, that the method of treating wounds at that time in vogue, was by applying oils and balsams to them, which *retarded* the cure instead of *promoting* it. It was discovered, however, that the best way of treating a simple wound, was to bring the divided parts into a position, and to maintain them so, without the application of any extraneous substance whatever. This was accordingly put in practice; and the application of ointment to the *weapon,* was merely for the sake of falling in with the superstitious notions then prevalent. The "powder of a human skull," was admirably adapted to assist in what was considered to be a *magical* process. Though no longer among our remedies, so late as the time of William and Mary, great importance was attached to it. The king himself, in his last illness, had to swallow the revolting dose.

at his death. 3. The *Sympathetic Alphabet*, for the purpose of communicating at great distances, and of conversing with friends, however far removed. It was formed by removing from one of the arms of each of the two persons who wished to correspond, a small flap of skin, of equal form; applying the flap taken from one to the arm of the other reciprocally. Upon these pieces of skin, which soon became part of the new individual, were traced the letters of the alphabet; and when one of the persons touched different letters with a stylet, the other person felt a pricking sensation in the corresponding letters."

"This theory was confirmed," says M. Thouret, "by an extraordinary fact which took place about that time. An inhabitant of Brussels, having had an artificial nose made for him, by the Taliacotian* method, returned to his ordinary dwelling place, where he continued to live in good health, the operation having succeeded. All at once, however, the new part became cold, pale, and livid; in short, it putrified, and fell off. There was no apparent cause for this unexpected catastrophe; but it was soon discovered that on the very same day in which the suppositious nose fell off at Brussels, a porter at Boulogna who (for a suitable reward) had furnished the necessary portion of skin from his arm, died in that place. A little time afterwards, a similar fact (no doubt equally fabulous) was brought forward. They had great weight with those who were disposed to receive with eagerness everything which seemed calculated to minister to the taste which man naturally has for the marvellous."

During the latter half of the last century, the celebrated Mesmer zealously taught the system of animal magnetism in Paris. He received a severe check, however, by the death of M. Court de Gébelin, author of the "Primitive World," whom he was treating. His death was announced by a journal in the following manner, which made a great sensation: "M. Court de Gébelin has just expired, *cured by animal magnetism.*" The distinguished Bertholet likewise published an opinion, that "the doctrine of animal magnetism, and the practice founded upon it, were perfectly chimerical." Indeed the system was scouted by the profession in general; but M. Deslon, a well-known physician, became its advocate.

In 1784 a commission of learned men and physicians (among whom was Lavoisier) was appointed to examine into the validity of its claims. "Animal magnetism," said its advocates, "is a fluid universally distributed, and is the medium of mutual influence between the celestial bodies, the earth, and animated beings. It is so distributed as to allow of no void; it is subtle beyond comparison; it is susceptible of flux and reflux, and is capable of receiving, propagating, and communicating all impressions of motion. The animal body experiences the effects of this agent; and it is by insinuating itself into the substance of the nerves, that it effects them immediately. It exhibits (especially in the human body) properties analogous to those of the loadstone, different and opposite poles being discoverable. The action and virtue of animal magnetism, may be communicated from one body to other bodies, animate and inanimate. The action may take place at a long distance, without the aid of any intermediate body; it is reflected by glass, and communicated, propagated, and augmented by sound. The virtue may be accumulated, concentrated, and transferred. Although this fluid is universal, all animated bodies are not equally susceptible of it. There are even some (although very few) which have properties so opposite, that their presence alone destroys all the effects of the fluid in other bodies. Animal magnetism can cure diseases of the nerves *immediately*, and *mediately* those of other parts. It improves the action of medicine, and promotes and directs salutary crises, in such a way as to bring them under our control. By its means the physician is made acquainted with the state of health of every individual, and can judge with certainty of the origin, the nature, and the progress, of the most complicated maladies. It prevents their increase, and effects their cure, without ever exposing the patient to dangerous effects, or unpleasant consequences, whatever may be the age, the temperament, or the sex. Nature offers to us, in magnetism, a universal means of cure and preservation for mankind."

Such was the agent which the com-

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* The celebrated surgeon, Taliacotius, was Professor of Theoretical and Practical Medicine, in the University of Boulogna. He was born in 1546, and died in 1600. The magistrates honoured his memory with a statue, in the hand of which they placed a nose. He was made the subject of humourous verses by Hudibras and Voltaire.

missioners had to examine; and M. Deslon, its advocate, engaged to prove to them its existence; to communicate his knowledge of its nature, and to demonstrate its utility in the cure of diseases. The following is an account of the manner in which the latter was attempted:—"The commissioners saw, in the middle of a large room, a circular oaken chest, about eighteen inches high, which was called *the trough*. The cover was pierced with holes, through which issued bent iron branches. The patients were placed round the trough, in rows, and each held an iron branch, which, by means of its bent shape, could be applied directly to the part affected. A cord passed round the patients, united them altogether. Sometimes they formed a second chain, by joining hands, so that the impression received by the left, was communicated by the right, and thus circulated through the whole. A piano forte was placed in a corner of the room, and different airs, in various movements, were played on it. The voice was sometimes added. Those who magnetized patients, had in their hand an iron rod, about ten or twelve inches long."

M. Deslon gave them the following explanations:—"1. This rod is a conductor of magnetism, which it concentrates on its point, and of which it renders the emanations more powerful. 2. Sound is also a conductor of magnetism; and in order to communicate the fluid to the piano-forte, all that is necessary is to approach to it the iron rod, and the magnetism is transmitted by the sound to the patients. 3. The cord which surrounds the patients is designed (as well as the chain of hands) to augment the effects of the fluid by communication. 4. The interior of the trough is so constructed, as to concentrate the magnetic fluid. It constitutes, in fact, a grand reservoir, whence the fluid is conducted away by the iron branches which are plunged into it." By means of an electrometer and a needle, the commissioners satisfied themselves that the trough contained nothing either electric or magnetic, nor could they discover in it any physical agent capable of producing the effects attributed to animal magnetism.

Besides the iron branches, the cord, and the union of hands, the patients were magnetized *directly* by means of the finger, or the iron rod moved about before the face, or above or behind the head, or over the affected parts. They were likewise acted on by being looked at steadily, but more particularly by the application of the hands, and by the pressure of the fingers on the *hypochondrial* and *hypogastric regions*, an application which was often continued for a *long time* sometimes even for *several hours!* The magnetized piano-forte was supposed to communicate its virtue to the person who played on it; and when the latter sang, the magnetic influence floated on the sounds of his voice to the ears of his patients.

As to the effect of all this on the patients, "Some were calm, and felt nothing; others coughed, spat, felt a slight pain, a local or general sense of heat, and had perspirations; others were agitated, and tormented by convulsions, which were remarkable for number, duration, and severity. Whenever one patient fell into them, several others were attacked. They were attended by the expectoration of a turbid, viscous fluid, sometimes streaked with blood; of which one young man brought up a considerable quantity. These convulsions (of which the commissioners saw one that lasted three hours), were characterized by involuntary and precipitous movements of all the limbs, and of the whole body, by wandering of the eyes, by piercing cries, weeping, hiccough, and immoderate laughter. They were preceded or followed by a state of languor, depression, and reverie. The slightest unexpected noise gave rise to startlings; and it was remarked that a change in the tone or measure of the airs played on the piano-forte, influenced the patients, so that a brisker movement agitated them more, and renewed the violence of their convulsions. The latter were inappropriately called *crises*, because they were considered as analagous to those salutary changes which nature sometimes produces in the course of diseases. More females than males were always affected with these convulsions, which it took an hour or two to produce, but which, when once established, spread with great rapidity.

All the patients appeared completely under the control of the magnetizer; so that even when apparently in a lethargy, a word, a look, or a sign from him, could rouse them from it. The magnetic fluid was not cognizable by any of the senses, notwithstanding what had been said of its colour, taste, and smell; and the commissioners threw overboard at once the doctrine of celestial influence.

AN ESSAY

ON THE ORIGIN AND NATURE OF

TUBERCULOUS

AND

CANCEROUS DISEASES.

(Continued from p. 956, No. 270.)

READ TO THE MEDICAL SECTION OF THE BRITISH ASSOCIATION, ON THE 23RD OF AUGUST, 1836, BY RICHARD CARMICHAEL, M. R. I. A., CORRESPONDING MEMBER OF THE ROYAL ACADEMY OF MEDICINE OF FRANCE, ETC. ETC., AND CONSULTING SURGEON OF THE RICHMOND SURGICAL HOSPITAL, ETC. ETC.

"I shall not notice the different species of intestinal worms, but shall call the attention of my hearers to the variety of worms with which the solid tissues of all animals are infested. These have engaged the attention of modern pathologists and naturalists in no slight degree; but we are indebted chiefly to the labours of Brera, Rudolphi, Bremser, Laennec, and Cruveilhier for most interesting information on this subject.

"The most simple form of animal matter, as yet acknowledged to be in possession of independent existence, is the hydatid. It is a vesicle filled with a fluid as clear, but of more consistence than water. This vesicle is inclosed in a capsule or cyst, which varies from the consistence of a serous membrane to the firmness of cartilage or even of bone. Bremser justly considers this cyst as the product of the tissue in which the parasite is embedded.

"There are only two kinds of hydatids discovered in man: the one most frequently found is termed by Laennec, acephalocystis, because it is simply a vesicle not furnished with either head, mouth, or suckers. By Rudolphi, Bremser, and others it is called echinicoccus. The other furnished with a head, neck, and suckers, by which last it is thought to imbibe its proper nourishment, is a step above the first in the scale of animal life, and is called from its form cysto-circus. It chiefly infests the lower animals of the mammalia class, being comparatively but seldom found in man. However, instances of its presence in human beings are detailed by Werner, Ficher, Treutler, Brera, and Rudolphi.* It was discovered and described by Pallas and Goeze. But the acephalocystis is that form of hydatid which is to be met with most generally in man. In the Leçons Orales of M. Dupuytren, we find a most interesting article on hydatid tumours developed in the muscles and in the viscera. These were chiefly acephalocystis, but he mentions some instances also of the cysto-circus species.

"The hydatid multiplies its kind by the production of diminutive hydatids within its cavity. By the growth of these the parent hydatid is pressed against the cyst. The cyst increases in size from distention, so that if an hydatid tumour be punctured, a multitude of these vesicles will escape. The hydatid, like any other living creature, will of course die a natural death. Those who have watched the progress of dissolution, observe that the first appearance of decline is, that the fluid it contains, from being limpid becomes turbid and opaque, and gradually thickens to the consistence and appearance of softened cheese. The hydatid itself or vesicle becomes wrinkled and contracted, and finally it becomes transformed into a calcareous mass. This final termination of the hydatid is mentioned by John Hunter, Rudolphi, Bremser, Cruveilhier, and all who have treated on the subject. By some the appearance is compared to moistened chalk or putty. The celebrated Ruych* was well acquainted with those transmutations of the hydatid, and makes the shrewd conjecture that those melicerous and atheromatous tumours such as we meet every day on the scalp, are nothing more than transformed hydatids; and Cruveilhier was of a similar opinion, viz. that encysted tumours, whether containing serum or melicerous matter, are of hydatid growth and origin.

"Acephalocyste hydatids are often connected together like bunches of grapes, the stalk of which is attached to part of the human body, and yet in this state they are admitted to be a collection of animals, each possessing an independent state of existence. These bunches of hydatids attached to something analagous to a placenta, are often found to be the component parts of false conceptions. They are termed by Wiessmantel, hydrometra hydatica. Bremser† has no doubt that they are distinct animals, though

* Bremser, 286.

* Opera Omnia, vol. i. p. 225, Anat. Med. et Chir.

† Bremser, p. 313.

tied together and fixed to the substance of the body; for he justly observes that a great number of aquatic animals are thus attached, of the individual animality of which no person entertains a doubt. Are we to conclude that hydatids (which, though known from the earliest periods, have been only acknowledged in modern times to be distinct animals) form the last link in the chain of animal life, and that there are not still simpler forms also in possession of a separate existence?

"Tubercles, I have stated already, have no connexion by means of vessels with the surrounding tissues in which they are imbedded, as is apparent from the preparations before you; they are commonly found in small regular circumscribed masses. They at first, generally before they undergo any transmutation, have the appearance of semi-transparent vesicles; even those that are opaque, on a close examination, I have often found to be hollow; in fact they are thickened vesicles or cysts. But even should they not present the vesicular form, but appear as solid masses without connexion of vessels with the surrounding parts, I do not see why their solidity should be an objection to their possession of an independent vitality. They may continue in this state for months, nay years, without their presence being suspected. As long as they themselves retain life, they do not occasion any stimulus or disturbance in the parts in which they have their nidus, to throw them off; but when they die, they act like extraneous bodies (as we know from the facts respecting the guinea-worm) and occasion local information and general disturbance of the system. They soften afterwards, and if simulated in the lungs may be expectorated, and the expectorated matter, as was proved long ago by Stark, is neither pus nor mucus, but is the dead substance of the dead and softened tubercle.

"The present prevailing doctrine concerning tubercles, viz. that they are lifeless masses of unhealthy or vitiated coagulable lymph, incapable of becoming organized, is contrary to the laws which govern animal bodies. No lifeless mass can remain in the tissue of a living body without exciting inflammation and suppuration, by which it may be expelled. Besides, the hypothesis is over strained. Who ever saw coagulable lymph deposited in the form of semi-transparent grey vesicles, or even in these regular compact masses like grains of shot? which we see in the preparations before us, and into which no vessels appear, although all the surrounding tissues are red with injection; and who ever witnessed depositions of lymph first softening and then changing into calcareous masses? But in this, the last transmutation of tubercle, we must be struck with the close resemblance which it bears to the acknowledged animal, lydatid.

"Before I proceed farther in my argument, I should wish to call your attention to the following facts, concerning the filea medinensis or guinea worm, of which I have spoken. We know that this worm, which Rudolphi considers peculiar to the body of man, may remain for months, nay, whole years, without producing any sensible uneasiness or accident; that it is only when it approaches the skin, when it pierces it, that pain and other troublesome symptoms are produced. The treatment consists, when the worm thus exposes itself, in seizing the part exposed and rolling it with much caution round a small stick, which is turned very gently every day for fear of breaking the body of the animal; for should this take place the remaining part of the animal would die, and giving, only when dead, the stimulus of an extraneous body, causes inflammation along its entire extent, which is sometimes considerable, the worm having been seen varying in length from one to three feet.

"I mention this fact, as throwing much light upon the effects of parasites on man and other animals. As long as the parasite retains the principle of life, it causes comparatively little uneasiness; but as soon as it becomes dead matter, it occasions inflammation in the surrounding parts, the first step to that process by which it is removed from the system. If we apply this fact to turberculous diseases, it will explain many of their symptoms in a satisfactory manner.

"But to return to our argument: let us look to tubercular formations in other parts; they are not caused by inflammation, and how will the doctrine of the deposition of vitiated coagulable lymph account for the presence of those enormous accumulations of regular compact masses of various consistenee which are found in the abdomen, to which Doctor Baron has given the name of tuburculated accretions? Medical Journals and Transactions afford an ample supply of these instances. I shall glance at one or two. Doctor Simmins* relates a case which

* Medical Communications, vol. 1.

during life was thought to be dropsy, and therefore a fruitless attempt was made by tapping to draw off the water; but after death it was found that the enormous distention of the abdomen was owing to a collection of hydatid tumours of various sizes and consistence.

"I have myself given to the public a similar case, which was attended by my friend Doctor Jackson of Dublin, and the late Doctor Joseph Clarke. The swelling of the abdomen was supposed to be pregnancy until the time of parturition had passed. On examination after death we found globular masses, varying from the size of a pea to that of a large orange, each filled with gelatinous fluid or substance which compressed all the viscera. When these masses were removed, the enormous growth may be estimated, when I assure my hearers that nearly a large washing tub was filled by them. How life could be preserved during the accumulation of such a mass, which seemed only to occasion death by its pressure on the surrounding viscera, surprised us not a little.

"Doctor Pulteney relates a case of an extraordinary enlargement of the abdomen owing to a fleshy encysted tumour.* 'It was one of those tuberculated accretions so well known, and weighed, when removed, fifty-six pounds. It was made up,' Doctor Pulteney observes, 'of a congeries of smaller tumours from the size of a nutmeg to that of an egg, and many were much larger. These were closely compacted and intimately united to each other, each, however, being a separate cell or cyst, with an extremely thick, fleshy coat, containing in its cavity a small quantity of fluid,' &c. &c. But enough of this case is detailed to show its nature; that it was a collection of hydatids which had gone through many of their transmutations from the vesicular towards the solid form.†

"I shall not take up your time by the detail of cases familiar to every practitioner of experience, and with which all the medical periodicals are amply furnished. Enough has been stated, to evince how insufficient is the doctrine of depositions of unhealthy lymph to account for a class of diseases which are not preceded by inflammation, the general precursor of the deposition of lymph, and if they are at all attended with inflammation, it is either the consequence of the death and softening of those masses, or of their increase to such a degree as to press upon and injure the viscera in their neighbourhood. On the contrary, the doctrine I venture to advocate, that of their possession of independent vitality, and of their faculty of increasing from their inherent powers, satisfactorily accounts for all the symptoms and phenomena which they occasion.

"Do acknowledged entozoa arise from the seed or eggs of parent animals of the same description, or are they the product of what is called equivocal or spontaneous generation? I am decidedly of the latter opinion respecting the lowest grade both of animals and vegetables, in which no sexual organs have been discovered. Twenty-five years ago, with the view of explaining the origin of cancer, I advocated this doctrine in my work upon that disease; and since, I find, that it has every day become more and more generally adopted, and among others, by those distinguished naturalists, Bremser, Blainville, and Cruveilhier, who have given the energies of their powerful minds to ascertain the origin, growth, and decline of the entozoa. It is well known to all naturalists, that whenever a slow decomposition of animal or vegetable matter is going forward, assisted by heat and moisture, immediately new forms of organized beings arise: thus the mucor or mouldiness which grows in all damp places, fungi, mushrooms, and lichens take place under similar circumstances. It may be said that the seeds of those vegetable productions are floating in the air; but how account, on the necessity of seminal or oviparous generation, for the green vegetable matter of Priestly? How account for those numerous species of entozoa which are found in the most hidden tissues or organs of the body? How account for the presence of worms in the intestines of an unborn fœtus? But I shall not draw any farther argument from intestinal worms, because many will argue that their eggs are admitted with the food, although it is more rational to suppose that they come from within, and not from without the body, no such worms being ever seen elsewhere, and they can only live for a very short time out of their proper nidus, the intestines. Besides, not only every animal,

* Mem. Medical Society, vol. ii. p. 265.

† A large collection of hydatids, taken from the abdomen of a fœtus belonging to the Museum of the Infirmary of Bristol, was shown to the section to illustrate this subject.

but each division of its intestinal canal, has its own peculiar species of worm. Thus the lumbricus teres does not reside in the rectum, nor the ascaris in the small intestines.

"'Some light,' Cruveilhier says,* 'may be thrown on the obscure subject of spontaneous generation, from the fact of the production of the infusoria in every liquid in which we macerate a vegetable or animal substance. It at first becomes charged with organic globules, which move in every direction by their own *innate powers, totally independent of the force of gravitation.* These globules are more or less active, and resemble a good deal the globules of the blood, which move with so great a rapidity; desiccation alone arrests the movement of those globules, and humidity again restores it to them. If the maceration is continued, the animals of infusion succeed those organic particles, which, like the spawn of the frog, enjoy great powers of locomotion as well as those of the will, so as to be able to avoid an obstacle, for in their movements they are not observed to strike against each other; in a word, they appear to be gifted with a high degree of vitality.' From these facts and views we can no longer admit the axiom of Harvey, 'omne vivum ex ovo,' but rather in its place substitute that of O'Kerr, 'omne vivum e vivo.'†

"Although '*omne vivum ex ovo*' originated, I believe, with the immortal Harvey, yet his clear sighted mind could not overlook the fact, that new forms of existence are always arising in humid places where decomposition of course was going forward. In the twenty-seventh section of his work, on the generation of animals, in which he argues that the fœtus, like the chick *in ovo*, draws its nourishment by its own innate powers, he illustrates this fact by the following passage: 'What shall we say of those animals produced within our own bodies? No one can doubt but that they grow and are governed by their own independent life (*propria anima*); such as the lumbrici, ascarides pediculi, &c. &c. *For an animal can be produced in almost all dry places which have become moist, or in those humid places which have become dry.*‡'—In fact, in the situations best adapted for the process of putrefaction or decomposition, without implying the necessity of the agency of eggs or seeds. In another part of the same section he supports the same argument, and as I have lately found to my great surprise, by the admission of the very facts which I am now endeavouring to establish, viz.: the independent vitality of cancer and other fungous parasites. These are his remarks:—'In the same manner the parasitic plants and fungi of trees exist: but even in our own bodies we have cancers, sarcomatous, melicerous, and other malignant tumours, which grow and are nourished as if by their *own innate vegetative life*, (*quasi propriâ animâ vegetativa*,) whilst the parts in which they grow become extenuated and wasted, in consequence of their defrauding the body of its nutritious juices.'*

If worms of the intestines do not arise from seed or eggs, from what cause do they spring? Bremser, who spent twelve years in close application to the disgusting but useful subject of studying the entozoa, advocates the doctrine of their spontaneous generation by facts which cannot be rebutted; and he is of opinion, that worms arise in those who either take in nourishment of an indigestible quality, or who swallow more food than they have powers to digest. In either case materials are furnished for their production in the way we have just considered.

"Are not hydatids and tuberculous masses formed in the solid tissues of animals, from the precise same causes? Either improper nourishment is taken, incapable of being assimilated, which vitiates the whole mass of fluids, and is unfit to replenish the waste of the system, or else

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* Dictionnaire, tome vii.

† Dictionnaire, tome vii. 329.

‡ Quid dicimus de animalculis in corpore nostro natis, quæ propria anima gubernari, et vegetari nemo dubitat? Hujus generis sunt lumbrici, ascarides, pediculi, lendes, syrones, acari, &c. &c. Aut quid statuemus de verme culis, qui é plantis, earumque fructibus oriuntur? Quales in gallis nucibus; cocco baphico, cynorrhodo, plurimisque aliis reperias. *Quippe in omnibus fere vel siccis humiscentibus, vel humidis sicciscentibus, creari animal potest.*—Harvie, *Op. De Generatione Animalium*, Ed. Lugduni, 1737, p. 112.

* Ad hunc pariter modum vivunt fungi arborum, et plantæ supercrescentes. Quin etiam experimur sæpius in corporibus nostris cancros, sarcoses, melicerides, aliosque id genus tumores, *quasi propria anima vegetativa nutriri, et crescere:* dum interea genuinæ partes extenuantur, et marcescunt. Idque ideo, quia tumores isti nutrimentum omne ad se arripiunt, reliquumque corpus nutritio succo (ceu genio suo) defraudant.—*Idem.* p. 113.

more is admitted than can be assimilated; for we ought to recollect that the last act of assimilation takes place in the lungs, where the blood is submitted to the influence of the air; and this circumstance may tend, in some degree, to explain the greater frequency of tuberculous diseases in the lungs than in any other part of the body.

"Dr. Clarke, in his treatise on pulmonary consumption, truly observes, 'that what is usually considered the early is in reality an advanced stage of the disease,) tubercular phthisis,) and that tubercle is a secondary affection originating in a peculiar morbid condition of the general system.' What is this morbid condition which Doctor Clarke contends for? Is it not a vitiated state, first, of the fluids, and afterwards of the solids, in consequence of imperfect assimilation?

"It is many years since I first advocated the doctrine that carcinoma ought to be classed amongst the entozoa, and I am every day more attached to that opinion. There is in every carcinomatous structure two distinct substances. One is a hard cartilaginous mass which admits of being injected, the other is of the consistence of brain, or a medullary substance, which does *not* admit of being injected. The latter I esteem the true entozoa or parasite, the former, *i. e.* the cartilaginous part, I look upon as the barrier which the surrounding tissues throw up to insulate the parasite. This liver of a sheep before you, which contains the animals termed 'facciola hepatica,' and by the victuallers in Ireland 'flukes,' will serve to illustrate the subject. Groups of these animals, which, when alive, move with a brisk motion in warm water, are contained, as you see, in cysts of a cartilaginous hardness, or in the biliary ducts themselves. Now the walls of these cysts are capable of receiving injection, as you may perceive by the preparation before you. We must infer, therefore, that those cysts have been formed, not by the parasites, but by the parts in which they are imbedded; and thus a barrier is placed between them and the organs in which they are lodged. When they are produced in a biliary duct there appears to be no necessity for the formation of a cyst; the duct answers the purpose, but the duct becomes enlarged and cartilaginous, as you may see in this preparation. A similar occurrence takes place in the bronchial tubes when tuberculous matter is formed in them. This is finely delineated in Plate 1. Fig. 4 of Doctor Carswell's Illustrations of Tubercle. In the one instance we cannot deny the animality of the contents of the duct; but in the other it is inferred from the various facts and arguments contained in this paper. I do not conceive that any argument is afforded against the opinions I advocate on the grounds that tuberculous matter may take the form of the part in which it grows. The same occurrence is observed when vegetable fungi sprout in narrow and confined places, and consequently will take their form and shape from those *external* causes, and yet no one doubts but that they grow by their own internal powers. Now, in order to see the medullary portions of a carcinomatous mass, make a section of it in any direction, and you will perceive, on pressure, the medullary ramification to ooze out at each of its divided branches.

"Fungus medullaris or medullary sarcoma, and fungus hæmatodes belong to the same family of disorders, but is chiefly composed of the medullary substance, there being but a very small proportion of the cartilaginous structure. The great distinction between these two last species of the same family is, that in fungus medullaris the medullary mass is contained in a cyst. In the latter there is no distinct cyst, but the medullary mass seems to be subdivided by membranous or semi-cartilaginous bands into separate spheroidal masses; each of these is probably a distinct fungus, the aggregate constituting the diseased structure or parasitic tumour.

"Now, these maladies are much more rapid and destructive than carcinoma, because there is no sufficient barrier thrown up by the neighbouring parts to obstruct their progress. Besides, there is scarcely an instance met with of fungus medullaris or fungus hæmatodes, in which the disorder has been confined to one organ. If we see it in any one part, we may with great certainty infer that it exists in others, and, therefore, conclude that it is owing to some fault in the constitution.

"In vol. viii. of the Medico-Chirurgical Transactions, are several interesting cases detailed by Mr. Langstaff, exemplifying the nature and universality of the attacks of fungus medullaris on almost every organ of the body. In the second edition of my work on Cancer, published in 1809, is an account of the symptoms of this same disease in a gentleman* who had those tumours on almost every part of his body. I regret that there was no post mortem

* Case XL. p. 197.

examination; but have no doubt but that similar tumours would have been found universally disseminated on the internal organs. Now, although the disposition to carcinoma is also often constitutional or general, yet it is not always so; it is sometimes merely local, and I shall explain under what circumstances it is so.

"1st By a local disposition to cancer I mean that change in a part, from a healthy, sound structure, to a morbid one, which has been occasioned in an otherwise healthy person, either by a direct and immediate violence, or by a continuous application of some irritating cause or agent. For example—the organization of a part may be injured by a severe bruise, and after the lapse of some months, a hardness of a carcinomatous character is found to have arisen in the part injured. Sir Everard Home, in his work upon Cancer, relates two cases, in one of which the disease arose upon the glans penis, in consequence of a violent contusion of that part; and in the other, in the foot from severe pressure and pain occasioned by wearing a tight shoe. In both instances the patients were young and had been previously healthy. In the same manner an ulcer not originally cancerous, such as a venereal bubo in the groin, may, by neglect, bad treatment, or constant irritation, assume, after the lapse of many months, the cancerous character. Or it may happen that frequent irritation of a part, such as the peasantry of Ireland are in the habit of inflicting on their under lips in the act of smoking, from the habit of constantly using short and heated tobacco pipes, may occasion carcinoma in the most healthy, young, and robust persons. Or, as it often happens, the frequent irritation of a pimple or wart, such as occurs in the daily act of shaving, may cause them to assume at length the carcinomatous character.

"2dly. A local disposition to carcinoma may also occur in organs, when they first cease to perform their allotted functions, without any constitutional disposition to the disease. Thus carcinoma chiefly affects the uterus and breasts of women at that period of life in which they cease to be capable of bearing children, *i. e.* from the 40th to the 50th year. These organs may then be considered useless appendages to the system; and a diminution of vitality or some morbid changes, we may infer, take place at this period in their structure, which render them particularly liable to carcinoma. Dionis observes, that out of twenty cases of cancer in women, fifteen will be found to occur between the 40th and 45th years.

"But independently of these local dispositions to carcinoma, a strong constitutional disposition exists in others, which is chiefly indicated by a peculiar depressed expression of the countenance, and a pale leaden colour of the skin. In the constitution thus disposed, the disease arises spontaneously and makes rapid progress without showing any disposition to ulcerate or produce those sloughs of the carcinomatous mass which are analogous to the softening of pulmonary tubercles. It also, in general, assails more organs than one at the same time. The lungs become unsound, and in all subjects of this description, in which I have had the opportunity of making post mortem examinations, these organs were found tuberculated. In such constitutions the experienced practical surgeon never thinks of being able to remove the disease by operation. I trust, however, I have sufficiently pointed out under what circumstances carcinoma may be esteemed merely a local disease, and therefore admitting of operation, or other means pointed out in my work upon Cancer, calculated to cure or alleviate it."

(To be Continued.)

PROCEEDINGS

AT THE

EIGHTEENTH ANNIVERSARY MEETING OF THE

HUNTERIAN SOCIETY.

REPORT,

PRESENTED BY THE COUNCIL TO THE EIGHTEENTH ANNIVERSARY MEETING OF THE HUNTERIAN SOCIETY, HELD AT NO. 4, BLOMFIELD-STREET, FEBRUARY 8, 1837.

(Continued from p. 962, No. 270.)

The Blood and Vascular System.—Some experiments were adverted to, in which a clot of blood reduced to a grumous fluid by comminution, and squeezing through a cloth, coagulated again on the addition of serum from serous cavities, but not when serum of ordinary blood itself was added. Other experiments were mentioned, in which a solution of chloride of sodium produced a similar result; apparantly proving that both phenomena depend on the salts

contained in the serum acting on fibrinous particles which it holds in solution.

Fibrinous Concretions.—Upon this interesting subject several cases have been adduced from the observations of members.

In the 1st case, there was hypertrophy of the heart, with serous and sanguineous effusion into the pericardium. The carneæ were large. The right auricle and both ventricles contained each a large polypus, weighing about an ounce, and attached by three or four peduncles. These concretions were of a pale red colour, solid, firm, and highly vascular.

2nd. A case of endo-pericarditis; the lining membranes and valves were covered with fibrin, which in some parts projected in the form of large masses.

3rd. Here the coagulum was situated in the *appendix auriculæ sinistræ* to which it decidedly adhered: it was firm exteriorly, soft and grumous within. Extensive ossification of the valves and pericardium co-existed with this concretion.

4th. Wart-like vegetations of various degrees of firmness were observed on that surface of the mitral and tricuspid valves which is opposed to the current of blood (rarely, if ever, are they seen on the other surface) together with a body like a half-almond which was attached to one of the aortic valves by its smaller end, and hung thence into the ventricle. All these formations were organized and covered by a very delicate membrane; so as clearly to distinguish them from calcareous deposits, or from cadaveric accretions.

5th. Occurred in a boy Æt. 14, who, from a very early age, had been subject to dyspnœa and palpitation. Six weeks before death his face swelled, and his lips became blue. The pulse was at first imperceptible, but the action of the heart distinct and trembling: there was also a projection of this part of the chest. The limbs swelled almost to bursting: diuretics produced little effect; blisters applied to the heels brought away much serum. A fortnight afterwards, gangrene commenced in several parts of the body, and he rapidly sank

A large mass of pulmonary apoplexy was found in the upper lobe of the right lung, and a smaller mass in the middle lobe. No inflammation was apparent. The heart was remarkably enlarged; especially on the left side. The vena cava superior was filled with firmly organized fibrin adhering to the walls of the vessel. The tricuspid valves were thickened by calcareous vegetations. The vena cava inferior and vena azygos were large and engorged with blood. The largest branch of the right pulmonary artery was almost entirely plugged with fibrin: the walls of the left ventricle were thick and firm, and the left auriculo-ventricular orifice remarkably small. The foramen ovale was closed, and some ossific matter appeared on the coats of the pulmonary artery.

The diagnosis of this disease of the vascular system is yet a desideratum; but has been attained by observing that dyspnœa, an irregular tumultuous action of the heart, a very weak pulse, cold, and sometimes purple extremities, with a decrease or absence of the natural sound of the heart, had occurred in other cases. The remote, and, in some cases, the immediate cause, was supposed to be rheumatic inflammation: in other instances, calcareous concretions on the valves, with dilated cavities. The exciting proximate cause of one class of these cases was supposed to be an inflammatory state of the blood or cordal lining membrane; in the opposite class of cases, obstruction and consequent slowness in the circulation. Just as in serous inflammation, loose flakes of plastic lymph, after being effused, attach themselves to the membrane, so these concretions which the state of the blood produces, may, when formed, excite adhesive *inflammation*, and become glued to the walls of the cavity or vessel by a peduncle. Has calomel any control over these vegetations? Two instances of decided *bruit de scie* in the heart's rhythm in connexion with other symptoms, indicated the existence of such formations. Antophlogistics and calomel were prescribed, and those signs ceased.

Aneurism.—A man of middle age and of robust constitution, had long suffered pain at the epigastrium, which was considered dyspepsia. He lost flesh and appetite for six weeks prior to death, which took place suddenly while dressing. A large aneurism of the aorta, immediately above the cœliac and superior mesenteric arteries had burst in two places. An analogous case was presented in a man Æt. 35, and of healthy complexion, who however had severe pain in the left shoulder and axilla; no pulsation was observable, — abdominal aneurism was suspected,—and he died suddenly, vomiting a large quantity of blood. The seat of aneurismal changes has been shown to be frequently in the middle coat of an artery,

which, in consequence of a morbid action yet to be fully explained, loses its elasticity, and the vessel gradually gives way. Where the internal coat is even extensively diseased, the form of the external coat is preserved. Three instances of incipient aneurism when carefully examined, appeared to be caused by depositions in the cellular tissue between the internal and middle coats.

Pulsation of Veins.—An ingenious paper was read on this novel subject in Physiology, in order to prove the existence of a safety-valve action in the right ventricle of the human heart. The explanation of such a valve was thus given, —that the veins being influenced by their own number and capacity, by the position of the body, by cold, compression, repletion, and respiration, bring the blood to the right ventricle in varying quantities, and with the most copious influx the cavity may and does become distended, upon which the tricuspid valve is drawn aside for the relief of the lungs.

The venous current was said to be accelerated by gravitation, by the downward pressure of an arterial column weighing against the inert column in the corresponding veins,—by the action of the muscles,—by the motions of the limbs, the pressure of the atmosphere, &c.; but *especially by the ventricular impulse propagated through the arterial tubes, and the capillaries into the veins of every part.* It was not, however, denied that some propulsive power resides in the capillaries. The fact that on immersing the hand in warm water previous to, and during venesection, the jets of blood may be distinctly seen to increase in equal number with each arterial pulse, was adduced as a proof that the impulse of the left ventricle is not always completely expended on the arterial, or even on the capillary system. Under circumstances of unusual vascular excitement, especially with repletion, the dorsal veins of the hand had been seen distinctly beating. Several well authenticated cases were adduced, one of peculiar interest in the person of a young girl who died of purpura hæmorrhagica. In her the pulse of the veins was distinct and synchronous with that of the arteries.

Pulsation of the veins appears to be normal, as is plainly observable in the jugular veins of all horses; occasional and dependent on excitement, as seen at any time by plunging the arm into hot water, and it cannot usually depend on a reflux of blood from the right side of the heart, since it is equally seen if that part of the vessel which is more distant from the heart is firmly compressed.

(To be continued.)

REVIEWS.

Practical Facts in Chemistry, exemplifying the Rudiments, and showing with what facility the Principles of the Science may be experimentally demonstrated, at a trifling Expense, by means of Simple Apparatus and Portable Laboratories, more particularly in reference to those by Robert Best Ede. 12mo. pp. 186. London, 1837. Tegg & Son, and Simpkin, Marshall, & Co.

Ward's Companion to Experimental Chemistry, consisting of Outlines and Directions to the Young Chemist, for performing Experiments by means of Simple Apparatus, with Facility and Success; also intended as a Guide to R. B. Ede's Youth's Laboratory. By John Ward. 12mo. pp. 36.

Mr. Ede's work is very useful to every one devoted to the study of Chemistry. It unfolds the principles of the science in plain and concise language, and illustrates the apparatus by numerous wood cuts. The proposed apparatus may be had at a very trifling expense, and encourage that spirit of ingenuity and perseverance by which difficulties, apparently insurmountable, may be easily overcome.

The work is not an elaborate treatise, but a concise and comprehensive epitome of chemical science. It is evidently the production of a scientific and practical chemist, and is a valuable manual for medical as well as general readers.

Mr. Ward's is what it professes to be, an outline for the young chemist, and a companion to the Youth's Laboratory. It is a horn-book of chemistry, and gives an account of several amusing experiments.

Both the productions before us are published on very moderate terms, and deserve encouragement from the heads of seminaries and all who have the superintendence of youthful instruction.

Medical Essays. By J. Hungerford Sealy, M.D. E. A.B T.C.D. No. 1. Phthisis Pulmonalis, its History and Varieties: being an Attempt to distinguish those Forms of the Disease which are Curable from those which

are Incurable: with a Novel View of Scrofula and Tubercular Depositions. 12mo. pp. 82. London, 1837. Sherwood & Co.

Consumption Curable. By Henry Congreve, 8vo. pp. 16. Berger. Price 2d.

Since the successful knavery of the late St. John Long, some members of the medical profession have availed themselves of the gullibility of the public in proclaiming "*consumption curable.*" This is an ingenious mode of acquiring practice, for it is well known that consumptive patients entertain the strongest hope of recovery to the last hour of their existence. It is also to be remembered, that they languish for weeks or months, and sometimes for years, after having been pronounced incurable by the ablest physicians; during which period the consumption curable people stick to them like true leeches, and pick their pockets while a single fee remains. When death approaches, the impudent and unprincipled curers very gravely declare, "we were called in too late; but if any other member of the family should be attacked, and remember the disease is hereditary, though we have cured thousands, pray call us in as early as possible, and we shall attend while you are able to pay us a guinea."

Thus Dr. Sealy professes to cure six out of every ten cases; Dr. Ramadge's claims are notorious; and the benevolent Henry Congreve advertises to the world, "Just published, 32 columns, price 2d. Consumption Curable. The best means of arresting this hitherto fatal malady. From the extreme variableness of the atmosphere of England, there is not an individual whose benefit is not consulted in this pamphlet. It is introduced at the astounding low price of 2d. from motives of benevolence to the afflicted. The asthmatic and those afflicted with harassing coughs, the nervous and dyspeptic, the mother, and the nurse, will find here advice of paramount value."

We hastened to peruse this benevolent pamphlet, and found it nothing more or less than a series of puffs of different nostrums sold by the author, who is a chemist or druggist. Such are the real motives of benevolence to the afflicted!

The London Medical
AND
Surgical Journal.

Saturday, April 8th, 1837.

PRIVILEGES OF THE MEDICAL PRESS.

In commencing a new volume, it affords a favorable opportunity to make some observations on the extraordinary changes which have taken place in the tone of the medical press since the commencement of this journal. About that period it may be said that the medical profession, unlike that of all others, was exercised and carried on at the pleasure and free will of its members, and being under no public *surveillance* or control, every possible misdemeanour, and all irregularities of conduct towards the public, met with no check.

Whilst the public acts of political men, of the warrior, and the divine, were subject to discussion and animadversion in every newspaper, not only were the most fraudulent abuses recognized by the medical corporations, but the greatest enormities were committed by the physicians and surgeons of our public hospitals.

The attacks which were made in the *Gazette of Health,* by the late Dr. Reece, on the constituted authorities, and the exposures which were also occasionally made of the mal-practices of individuals, which were afterwards boldly followed up in the *Lancet,* created such an excitement in the minds of the corruptionists, that the first attempt was made to crush the press, and at once stem the torrent which had begun to flow into the Augean stables. That memorable occasion must be fresh in the recollection of some of our readers, when several of

those individuals who were likely to suffer most from public exposure, subscribed a sum of money, in the hope of finding relief in courts of law, and further, if possible, hurling to destruction the authors of those exposures which they well foresaw would sooner or later lead to what *they* very justly considered most alarming changes in the state of medical polity.

Having completely failed in these projects, being baffled on every occasion when they had the effrontery to exhibit themselves in a court of *justice*, and public interest increasing daily by the exposures which were made by the medical press, then, and not till then, were they convinced of the necessity of having recourse, as a last resource, to the establishing of a periodical of their own, which would enable them to have a weekly opportunity of upholding all that was fraudulent and corrupt, of distorting and concealing the truth, and of propagating falsehood! To accomplish so desirable an object, a liberal subscription was entered into, to start a journal on these principles; and which periodical, it is but justice to admit, has most rigidly and conscientiously performed the duties imposed upon it. In this state of things, the struggle which was made to expose and vilify the mischievous practices of the corruptionists, and the convulsive efforts which were made to screen and defend their frauds and impositions, led the contending parties to use expressions and employ language as severe as the limits of the law would permit; and in some cases, we must admit, far beyond what good taste would have dictated. In this great struggle of medical reform, we are proud to aver that in many instances we have availed ourselves of the *privileges* of our contemporaries, and we trust that the efforts which we have made to ameliorate the condition of our professional brethren, more particularly that of the general practitioner, have not been unavailing; and we do also trust, that in the performance of this important duty, we have never allowed our feelings to indulge in those low personalities and vulgar aspersions which so abundantly adorn the pages of the subscription gazette.

Whilst the prospects of the future must ever be a matter of difference of opinion, we may always derive valuable lessons from the events of the past; and no more important one presents itself than the manner in which the medical press, for the last few years, has burst the narrow bonds which were supposed, by the corruptionists, to fetter it, by boldly and manfully exposing the abuses we have alluded to, and holding up to public odium the supporters and abettors. If we glance through a volume of the early medical journals, a degree of tameness and subserviency will be found to pervade its pages, ill calculated to expose and correct the enormous abuses in hospital government and medical instruction, which were universally admitted at the time to exist. These may be attributed to many causes, but in particular to a want of moral courage, and an ignorance of the extent of power which the medical press possessed, added to these the direct interest which some of the hospital PURES had in the *circulation* and *sale* of the journals.

When baffled in their appeals to courts of *justice* (in which they often cut so contemptible and sorry an appearance,) the idea seized them as the last resource to start an opposition gazette, and thus demonstrated their *admirable consistency*, by opposing the enemy with the same, but inferior, kind of weapons, against the use of which they had for-

merly so loudly, but ineffectually, inveighed. It was on the birth of this *Medical Gazette reform clog*, that the full extent of the privileges of the medical press was practically ascertained; the abuse, personalities, and misrepresentations it weekly emitted, led us in exposing them, to use similar language, on some pressing cases; and notwithstanding that we sometimes received strictures upon our new style, in private letters from some of our most valued supporters, yet, to meet the *intellects*, and accord to the taste, of our abusive opponents, we descended to the low ground they had taken possession of; and thus disadvantageously circumstanced, we had to watch with a keen eye the movements of an enemy, proverbially supported in its rear by the contributions and pecuniary support of a knot of individuals, whose surreptitious reputation and position in medical society, demanded the most energetic and active movements, upon their parts, to maintain.

How far the Medical Reform Clog has effected the object for which it was brought into existence, we shall in a future number examine; and at the same time it will not only be interesting, but highly instructive, to make selections from the several medical journals in illustration of the *privileges of the Medical Press.*

THE MIDDLESEX HOSPITAL.

The Governors of the North London Hospital have been well rewarded by having made the first effort to reduce the exhorbitant demand which had been so long made by all the recognised Hospitals, on the medical student. When it was first proposed to admit students to the North London Hospital at a reduced price, it created the greatest consternation and dismay amongst the old monopolists of Lincoln's Inn Fields; and so mortified were many of the members of the Council on this occasion, that it was extremely doubtful whether or not the College would have granted a recognition to the New Hospital. The result has been, as the well grounded feelings of the Council anticipated, that an overwhelming mass of students poured in at the expense of the other Hospitals, more particularly those of Westminster, Middlesex, and Smithfield.

Such has been the effects of the reduction of the admission fee to the North London Hospital, that it has become a subject of grave deliberation amongst the medical fraternity of other institutions, how far it would be expedient for them to reduce their prices; and there is a general impression that the medical officers of the Middlesex will set the example next season; and if they do so, there is no doubt but that they will receive more money than they have done last, by doubling the number of students to the medical and surgical practice of the hospital.

Should the mock-liberals of Gower-street adopt the narrow-minded policy of closing the hospital doors against all students, who do not attend the classes of their own schools—a proceeding which was lately contemplated—then will the doors of the Middlesex Hospital be thronged, and the medical staff fatten and prosper. We would advise our friends at the Westminster to stick to the old price, as it is of importance to uphold the *dignity* of the hospital, and as no diminution in price could be reasonably expected to increase the number of students.

FAMILY CORRESPONDENCE.

Progress of an Irish Medical Student.—His Account of his Journey and the Metropolis.—His Introduction and determination as to Medical Schools.—His Father's Reply.

My dearest Father,—You will be pleased to know that I have arrived safe at my journey's end. I got here at half past seven o'clock yesterday morning, after having suffered much, as the night had been very cold, and I was the only outside passenger. I left my trunk at the White Horse cellar, and having had a comfortable breakfast, which cost me eighteen pence, I immediately started to look out for a lodging; and here I am, having taken up my quarters in a small room, two pair front, opposite No. 104, Great Russell Street, Bloomsbury, where please to address all my letters. After I arrived at Cork, I waited on your old college companion, Doctor M—, who invited me to dinner, and will answer your consultation about the Twin case by return of post. He refused the fee for his opinion, saying, "Keep it, Thomas, you will find plenty of use for this and many more before you get emancipated from the clutches of my old friends in Lincoln's Inn Fields." I picked up a few letters of introduction to some of the lions here, concerning which I shall tell you after I have delivered them. I sailed in the "Herald" steamer, and took a deck passage, the weather being promising; but, unfortunately, there was such a number of pigs on board for the Bristol market, and my becoming very sick, it was altogether a scene of dirt and confusion. The only person who knew me on board was Mr. ——. He recognised me from my likeness to my mother, and we had a long *confab* about it. There were several students on board, all bound for the London Schools; but, like myself, they were all at sixes and sevens where to go to get the thing best and cheapest. We all agreed it would be best to make a survey of the different Schools, hear the different Professors, and have a meeting in London to compare notes.

When I got to Bristol, I gave the steward half a crown, besides the passage money, and he recommended me to a cheap lodging for the night. I did not remain in Bristol longer than twelve hours, as all my anxiety was to get to London as soon as possible, which I accomplished on the outside of the "Accelerator," for one guinea, including guards and coachmen. I was in several lodging houses here, but could not find a decent room in a respectable street under eight shillings a week. I could have got a room in Hadlow Street, Burton Crescent, close to the Gower Street School, for six shillings, or even less; but the neighbourhood is so disrespectable, that I knew you would be more dissatisfied than myself, and not grudge the additional two shillings, for the sake of appearances. In addition to the hire of the room I have to pay three pence a day for fire, candles not included, two pence for cleaning each pair of boots, washing will not cost me more than one shilling a week, as what are called "black tommies" are chiefly worn here. Breakfast at home will not cost me less than two pence halfpenny every morning, and I can dine well out at a *slap bang eating house*, or procure the needful at the *Holborn ham shop*, for eight pence, including a pint of porter. These, with a shilling a week to the servant of the lodging house, will include all my expenses, provided you can get smuggled to me the whiskey and potatoes, neither of them is worth eating or drinking here, and the price of the whiskey, bad as it is, is *twenty-one shillings a gallon!* and, (would you believe it?) they sell the potatoes by the *pound!* Now, my dear parent, I will write to you every thing that occurs, and all that I see and hear; and, God knows I shall have plenty to do and think about to prevent me getting into difficulties, for it is a larger place than even I imagined, and all the people, young and old, seem to me very abandoned and profligate. If you could get *Garrett Standish* to frank my letters, it would save expense. Give my affectionate love to my mother and dear sister. Tell Pat that he is a much happier fellow where he is, with his gun in his hand, and Ponto at his heels, than I am away from them all at home. No one knows the comforts of a father's house until circumstances compel them to quit their "home, sweet home." Tell *aunt Sarah* that I won't forget all the commissions. When you next see the *Morgans*, tell Emily not to *forget*. From what I have heard here, I don't think I will have enough of money to pay the class fees. I'll write to you what more I shall want, and give you a list of the expenses. Believe me, beloved Father, your very dutiful and affectionate Son,

Thomas.

P. S. This letter is enclosed in a frank of the honourable Radical member for

Finsbury, who says he remembers you and has kindly promised to give me his friendly assistance and advice, which will be great things to have. Had you much sport on the 20th?

Great Russell Street, Bloomsbury,
Sept. 27th, 1836.

Kilballymacalogue, Blarney.
Oct. 8th, 1836.

My dear Tom,—I have just read your letter, and must leave your mother to tell you all our domestic news, as I am called to a case of emergency; and if I don't attend to it immediately, somebody else that *you* know will. We were well pleased that you had borne your journey so well, and I have the fullest confidence in your future conduct, as your mother's example and precepts will, I trust, always guide you, and the natural warmth of your heart will induce you often to think of us all at Kilballymacalogue. Let me again impress upon you the necessity of not entering to any school, or feeing any hospital, without due consideration. In the choice of an hospital, Mr. Wakely's opinion would, to me, be decisive. He has no self-interest to serve, and must appreciate the good and the bad of them all. I enclose you letters to Sir Astley Cooper, Sir Benjamin Brodie, Sir James M'Grigor, Sir William Burnett, Sir Stephen Hammick, Sir Charles Scudamore, who got the thousand pounds for coming over to visit the late Marquis of Waterford, Sir Henry Halford, who, by the bye, is not known to any body here, and Sir Matthew Tierney, who has, I understand, become too great a man to pay attention to introductions from any of his old Cork relatives and cronies. James Johnson, also, does not acknowledge his countrymen; but I'll see what I can do to get you a letter to Doctor Rumadge, who is said to have great influence at the College of Physicians, and can procure you a ticket of admission to their valuable conversations and tea parties. Doctor Jones Quain will, I am sure, be both kind and useful to you; and, although he is not now a professor himself, his brother Dick is still at University College, who will, I have no doubt, be attentive to you, for old acquaintance sake. Tell him how glad all friends are to hear he is getting on so well. Dr. Bankhead is still in France, so that a letter to him can be of no use. The letters to Travers, Lawrence, Bransby Cooper, Elliotson, Carswell, Liston, Anthony Todd Thomson, M'Cleod, Cummin, Golding, Howship, Guthrie, Scott, Mayo, &c. &c., you can deliver at your leisure. In delivering your letter to Mr. Todd, the professor of Anatomy at the King's College, ask permission to see the building, and also Somerset House, which was a very fine place in my day; at the same time, be cautious not to talk on political subjects with him. With all these men, when you deliver your letters, it is absolutely necessary for you to recollect the old maxim, "*eyes open, ears listening, mouth shut.*" I will send you whatever money you may require, trusting to your discretion and economy; and have only to request you will not run up bills, but pay ready money for every thing. When next you write, tell me the School you have determined to enter to, also the Hospital you have selected to walk, and which, if any, of your other letters was of any service to you. Avoid the company of idle young men, and stick to your pursuits, my dear Thomas, when, after two years residence, I hope you will pass your examination with credit, and return to your happy home. I have no doubt but I have interest enough to get you into the ——— Infirmary, where there must be a vacancy in a few years; and I need not tell you what a stepping stone to fortune this would be. Say nothing about this, as others are on the look out; but I have little doubt of your success, when the vacancy occurs, so keep your eye on the certificates. All join in affectionate love, particularly dear Tom, Your loving Father, PETER ———.

HOSPITAL REPORTS.

NORTH LONDON HOSPITAL.

Disease of the Knee-Joint—Removal of the Thigh at the Hip-Joint.

Tuesday, March 28, 1837.—A little girl, between the ages of five and six years, submitted to the removal of the thigh by the double flap operation, for disease of the knee-joint.

Mr. Liston removed the limb in less than two minutes; he was assisted by Mr. Richard Quain, who compressed the femoral artery in his usual steady and composed manner, so much so, that without exaggeration an ounce of blood was not lost; indeed, so long as an assistant well acquainted with topographical anatomy, and of firm nerve, can be procured, the tourniquet may be altogether dispensed with in these operations. Con-

sidering the screaming which the little patient made before the operation, she bore it altogether with much nerve. An abscess, the extent of which towards the groin, which unfortunately had not been detected before the operation, was cut into, from which a quantity of pus was discharged. When the limb was removed, it was then ascertained that this abscess had communicated with the knee-joint, the interior of which was filled with pus; there was also extensive caries of the inner condyle of the femur.

ST. GEORGE'S HOSPITAL.

Thursday, March 30, 1837.—LITHOTOMY.—Mr. Babington, in the presence of a number of students from various quarters of London, removed a middle-sized stone from the bladder of an adult. The incision was made into the bladder by the lateral method, with a knife and grooved staff; but on introduciug the forceps a prolapsus ani occurred, which pulling down the inferior fundus of the bladder, rendered it impossible to extract the stone with the ordinary instrument. After a few minutes' delay, a curved forceps was procured, and the stone removed with little difficulty. Messrs. Keate, Hawkins, Cutler, Walker, and Sir Benjamin Brodie were present.

Necrosis.—Removal of the Sequestrum.

Sir Benjamin Brodie next proceeded to trephine a necrosed humerus of a young lad for the purpose of removing the sequestrum. Incisions were made of sufficient extent to allow of the application of the crown of the trephine, and after much sawing, and a great deal of difficulty, a portion of the shaft of the old humerus, from five to six inches in length, was removed. This is the second case in which a very serious operation has been lately performed by Sir Benjamin Brodie, merely for the purpose of removing a sequestrum of a necrosis bone. We say serious, because we deem it proper to state, in the former case, where Sir Benjamin operated for a necrosis of the tibia, the patient died in three weeks. We doubt exceedingly the propriety of these severe measures. The patient, also, whose leg Sir Benjamin Brodie amputated, an account of which we gave in this journal, became a victim to the operation. So many fatal and unsuccessful results of operations as we have almost daily an opportunity of observing in the London hospitals, ought surely to be a caution to "young surgeons," as well as to "veterans," and ought to make us careful in extolling the advancement of *modern* surgery.

Removal of the Great Toe and Part of its Metatarsal Bone.

After the completion of the last operation, Mr. Cæsar Hawkins proceeded to remove the great toe, with part of its metatarsal bone, from the foot of a boy aged thirteen years, afflicted with strumous disease. Two flaps were formed from the dorsal and plantar aspects of the foot, and the metatarsal bone was divided near its tarsal extremity with the large bone forceps called "*The Lion Forceps*," a faithful representation of which is to be found in Scultetus's "*Armamentum Chirurgiæ*." Mr. Hawkins was in no hurry about the operation, which was not completed for eight or ten minutes, although the patient suffered great pain, saying to the operator, "you make me sweat." He did not pursue the *race-course* plan of operating,* and by not disarticulating the metatarsal bone he thus preserved the attachment of the peronæus longus muscle, and also that of the tibialis anticus; a proceeding in the performance of this operation which reflects the greatest credit upon the anatomical and physiological acquirements of Mr. Hawkins.

Operation for Lithotomy—No Stone.

The boy who was operated upon for stone, and in whose bladder no stone was found, is recovering. The little fellow is still in hospital in good spirits, and labours under symptoms of calculus. There are two other patients with stone in the bladder, who are undergoing the necessary preparations. We advise the house-surgeon to keep a sharp look out after them, as it is whispered that they may find their way into the *trap* of the North London.

ST. BARTHOLOMEW'S HOSPITAL.

Stricture—Abscess in Perineum and Prostate Gland—Effusion of Urine—Death.

Edward Walker, aged 59, admitted into St. Bartholomew's Hospital, November

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* See last Journal, p. 945.

5, 1836. He has suffered from stricture in the urethra for thirty years; has had difficulty in making water during the same period, and this difficulty was greatly increased, in consequence of which he applied to a medical gentleman, who made an attempt to pass an instrument for him, but without success: and he bled very much after the operation.

On the evening of the same day, he suffered great pain in the perineum, and could only pass a small quantity of water. He did not again seek medical advice, until two days previous to his admission, when another unsuccessful attempt was made to introduce an instrument, after which only a very few drops of urine followed.

Saturday, Nov. 5th, 9 o'clock A.M.—He now states that he has not made water for a week. There is considerable fulness of the perineum, with great pain of that part, and some pain of the scrotum. His countenance is expressive of great anxiety. Tongue covered with a dark brown dry fur; pulse quick, and small. An attempt was made to introduce a silver catheter, which came away much blackened and discoloured, and about eight ounces of extremely fœtid urine followed the removal of the instrument. He was placed in a warm bath; in which he remained about twenty minutes, and obtained great relief.

Mr. Earle saw him about one o'clock in the afternoon, and after unsuccessfully attempting to introduce a catheter, he cut down upon the urethra through the perineum, with a double edged scalpel, laying open the canal immediately behind the bulb. Some of the same fœtid urine slowly escaped. On attempting to pass a catheter through the wound into the bladder, it passed evidently out of the canal of the urethra into a boggy undefined space, having bridles extended across it in all directions, and which gave the sensation of a cavity in which there was breaking down of cellular structure. With much difficulty, a gum-elastic catheter, without a stilette, was introduced into the bladder. This was retained in position by proper bandages. He takes a saline mixture with antimony.

7 P.M.—He expresses himself much relieved by the operation; healthy urine passes freely through the catheter; he complains of no pain; tongue moister, but still much furred.

6th.—Has slept well (the first sleep he has had for some days past); urine passes freely, both through and at the sides of the catheter, but he complains now of great pain in the scrotum and left groin. Fomentations ordered to these parts. Tongue remains as yesterday, as does the pulse. Bowels are freely opened.

7th.—Has had rigors at intervals, though he has continually dozed since yesterday. The catheter is removed from the wound, as the urine flows freely past it; the pain in the scrotum and groin has much subsided, though the scrotum is greatly enlarged and livid. A large diffused swelling, with considerable redness of the integuments covering it, was observed in the left lumbar region, extending down to the brim of the pelvis. A puncture was made into this with a lancet, and some bloody urine escaped; and minute punctures were also made into the scrotum. He was ordered to discontinue the antimony, the action of which was transferred from the skin to the bowels. Wine and brandy were ordered to be administered frequently, and fomentations to be applied to the loins and scrotum.

8th.—Urine continues to escape through the wounds in the perineum and loins. He lies in a comatose state, and is rapidly sinking.

He died on Wednesday the 9th, having been quite insensible during the last twenty-four hours.

On examination after death, the urine was found to have completely infiltrated the cellular tissue of the perineum and scrotum, the left groin, and to have extended upwards to the loins, and even to the axilla, on that side; but no urine was effused into the cavity of the abdomen or pelvis. The bladder was much thickened, and the mucous membrane in an ulcerated state. The prostate gland was slightly enlarged, with an abscess in its substance. The urethra was very much diseased, the first four inches being the only part assuming at all a healthy appearance. There was great difficulty in following even the track of the remaining part, which appeared to have given way about the membranous or muscular portion. Opposite to this spot there existed an abscess in the perineum, communicating with the urethra, and also with that in the prostate gland. It was also evident that several false passages had existed, one of which, after pursuing a course of about two inches, perforated the urethra again. The kidneys were healthy, but the ureters much dilated.

It would have been exceedingly interesting to have discovered whether the urethra was ruptured primarily, in conse-

quence of ulceration commencing within its canal, or whether this was secondary to the prostatic and perineal abscesses. From the condition of the patient when he entered the hospital, and state of the parts after death, the solution of this difficulty was rendered impossible. —*Medical Gazette.*

HOME CIRCUIT

KINGSTON, MARCH 30.

(Before Chief Justice TINDAL and a Special Jury.)

THE KING *V.* CARRINGTON AND OTHERS.

This indictment was preferred against the defendants, Benjamin Carrington, Benjamin Nelson Linwood, Frederick Musgrove, James Tomlinson, Thomas Harris, and Edmond Edmonds, all medical students of Guy's Hospital, for a riot, and also an assault upon John Williams and Thomas Moysey, two of the porters, and Mr. Richardson, a student of St. Thomas's Hospital, on the 16th of December last. Mr. Harris did not appear.

Mr. THESIGER, Mr. CLARKSON, and Mr. CHANDLESS conducted the prosecution; Mr. PLATT, Mr. CHANNELL, Mr. TURNER, and Mr. BULLOCK defended.

There was a great mass of evidence adduced on both sides, and the trial consumed considerable time in its investigation; but the details may be condensed into a brief summary.

It appeared that the alledged riot and assault occurred on the 16th of last December, on the occasion of an operation of lithotomy which was about to be performed on two patients at St. Thomas's Hospital. On the Friday preceding the 16th there had been some disturbance among the students, and in order to prevent a repetition of it, Mr. Nash, the steward of St. Thomas's, placed three porters at the doors leading into the operating theatre, and gave them directions not to admit any pupil unless he showed his surgical practice ticket. They were also directed to place the students in the places appropriated to them—namely, the dressers in the lower rows, and the students in the upper, the area being kept for the operating surgeons and their dressers only. It had not been usual to demand the practice tickets previous to admission, and the dressers were on ordinary occasions allowed to occupy the area; but the governors of St. Thomas's Hospital, feeling that it was only a liberty granted by courtesy, determined, in consequence of the previous disturbance and tumult, to enforce the right which they contended they possessed, of excluding those who did not show the authentications of their right of admission. Accordingly, on the board announcing that the operation would take place, and which was placed in the room of both hospitals, they affixed a notice that every gentleman who wished admission must bring his ticket with him. At a little past one on the day in question, according to the evidence adduced on the part of the prosecution, Mr. Carrington came to the door and demanded admission. Having shown his ticket, Bull, the porter, who was placed at the outer door, called out to Moysey, another porter stationed inside the door, to let the gentleman pass, as he had shown his ticket. Moysey opened the door, and Mr. Carrington entered; but he had no sooner got in than he raised up his arm and struck Moysey. Williams, another porter stationed at the door leading into the area of the theatre, saw him give the blow, and asked why he had struck a man in the execution of his duty? To which Mr. Carrington replied, "If you are not very civil I will strike you." Williams told him he had made an assault upon his fellow-servant, and if he persisted in such behaviour, he would not allow him to go into the theatre at all. Mr. Carrington immediately rushed past Williams, and tried to get in; but Williams caught hold of him and stopped him. Mr. Linwood at that moment came in and seized Williams by the collar, and struck him two or three times. Williams, who, besides being a porter of the hospital, was a constable, pulled out his staff, showed him he was a constable, and desired him to desist from striking him while in the execution of his duty. No attention, however, was paid to what he said, and Mr. Carrington and Mr. Linwood seized hold of him, and tried to throw him down. He caught hold of Mr. Linwood's leg, and prevented his being thrown. Both Mr. Carrington and Mr. Linwood then left him, and rushed into the body of the theatre. Williams followed them, and pointing out the seats appropriated to them, told them they had no right where they were. They replied "They would see him —— before they would go there; they had a right to be where they were, and they would stop. He told them if they would not go out quietly he must get assistance and put them out. He then called Moysey, and they tried to put them out, but could not

effect it. The outer door was then forced open, and a crowd of students rushed in. Mr. Nash, the steward of the hospital, and Mr. Travers, who was to perform one of the operations, then entered the theatre. There was a great noise of hissing, howling, and all sorts of clamour, and Mr. Nash and Mr. Travers addressed the students, and endeavoured to persuade them to desist from making the disturbance. Williams went on to the landing-place, and immediately afterwards there was a general rush from the theatre, and several voices shouted out "Over with him; over with him!" The crowd then pressed upon him, and forced him upon the rail of the banisters, and, taking hold of his leg, tried to put his head downwards. The top of the banisters was 30 feet from the ground. Mr. Richardson, a pupil of St. Thomas's, having noticed the conduct of the parties, followed the defendants, and, seeing the treatment of Williams, he got hold of him, and succeeded in forcing him away from the students into a ward. Mr. Richardson upon that was immediately attacked and struck; and Mr. Musgrove it was stated, pinioned his arms behind, and, after having tried to throw him down, took him up in his arms, and they were both forced by the crowd into Henry's ward, where Mr. Musgrove threw him upon the ground. While lying there he received several kicks, and, in self-defence, he seized hold of the poker, but was prevented using it by one of the police, who were afterwards called in. The tumult continued between three and four hours, during which time there was a constant hissing and hooting. Mr. Nash, Mr. Travers, and Mr. Tyrrell, having in vain tried to appease the noise, the police were sent for, and the operation was deferred.

The above is the substance of the evidence for the prosecution. On behalf of which it was contended that the defendants, with other students, had acted upon a plan of making a riot, in consequence of their being refused admission to the operation unless they produced their surgical practice tickets; they entertaining an opinion that they had a right to admission to the theatre whenever an operation was performed, and that the dressers by right could remain in the area for the purpose of witnessing it. The premeditation was asked to be inferred on account of certain expressions, which had been used during and before the disturbance, such as, "Where are Grainger's men?" and "The police are outside the door waiting for you, Carrington and Linwood; but if they are, —— them, let us upset them." And previously to the time at which the operation was fixed to take place, a student of Guy's heard some one say in the dissecting room at that hospital, "Who is going up to St. Thomas's to see the row there?"

The substance of the evidence on the part of the defendants, which was detailed by several medical pupils of Guy's Hospital, who were present on the occasion in question, was that there was no premeditated plan of riot; but, on the contrary, the students complied with the regulations of the hospital by producing their practice tickets when asked for. The disturbance arose from the manner in which the porters behaved towards the different gentlemen; that Williams was very offensive, and told Mr. Hemming, after he had asked him for his ticket, and that gentleman had expressed his surprise at being asked for it, that if he did not produce it he must forcibly thrust him out; that when Mr. Carrington was proceeding from the outer door of the passage to the inner door, Moysey put his hand upon his shoulder, and said, "You can't go there, Sir; you have no right." Mr. Carrington pushed him on one side, and went into the area, upon which the porter, Williams, followed him, took him by the collar and swung him round, and then pulled him out through the area door. While Mr. Carrington and Williams were scuffling, Mr. Linwood passed, and Williams immediately left Mr. Carrington and took hold of Mr. Linwood by the collar, in the same way as he had seized Mr. Carrington. That Williams cut Mr. Carrington on the face with his staff, and made it bleed. That as soon as Mr. Travers and Mr. Nash entered the theatre, Mr. Linwood and Mr. Carrington went up to them, and complained that they had been ill-used and assaulted by the porters. That when the police came Mr. Linwood gave Williams into custody. They attributed the disturbance entirely to Williams, and stated that had he been removed, it would have immediately ceased. There was no disrespectful conduct meant or shown towards Mr. Travers or Mr. Tyrrel; but the hissing and hooting was applied to Williams, who, after having committed the assault upon Mr. Carrington and Mr. Linwood, went into the theatre, and looked about in a very impudent manner. The students were much excited from the treatment they received. It was

stated by all the pupils who were examined as witnesses, that they were in the habit of attending the operations, but had not been called upon to produce their surgical practice tickets. Those who were, or had been dressers, occupied the area of the theatre.

Mr. Bransby Cooper also stated that when he was a dresser, such was the practice; he had known it, however, departed from upon one or two occasions. He further stated that Mr. Musgrove was his dresser, and he considered him very gentlemanly, quiet, and attentive to his duties.

Mr. Morgan, surgeon at Guy's Hospital, gave similar evidence with regard to Mr. Linwood, who had been his dresser. Mr. Linwood had won a prize for the best essay on opthalmic surgery.

Mr. Ward deposed to the same effect, relative to Mr. Edmonds.

Chief Justice Tindal, in summing up, told the jury they must determine upon the evidence they had heard—first, whether the defendants had been guilty of a riot—and, secondly, whether all or any of them had been guilty of an assault. With regard to any supposed right of admission of the students to the operations at the hospital, that could not be determined by the present question; because whether the right existed or not, the law would not sanction their enforcing it in the manner in which the defendants had been represented to have acted. And having the right, they would be equally amenable for a breach of the law, as if they possessed no right.

The jury retired, and were absent for a quarter of an hour. They then returned with a verdict of *acquittal* for the riot, and of *guilty* as against Mr. Carrington, Mr. Linwood, and Mr. Musgrove, for the assault upon Williams.

The defendants were then called up for judgment; and

The Learned Judge addressing them said—You have been found guilty, by the verdict of a jury of your country, of an assault upon John Williams, of an aggravated nature, and it gives me great pain to pass the sentence of the law upon young men of education, and in your station of life. I shall not attempt by any observations of mine to aggravate the nature of the case, because I doubt not your own reflections will be more severe monitors than any remarks I can offer. It is necessary, however, to hold out to the public that offences of this nature must be put down by the strong hand of the law; but when I look at your youth and inexperience, I am induced to think that circumstances of excitement prevailed upon you to act in the manner described. I shall take care, therefore, not to pass a sentence that shall affect you with any pain from the nature of the punishment, or tend in any way to blight your future prospects in life. Taking all the circumstances of the case into consideration, the sentence of the Court is, that each of you pay a fine to the King of 40*l.*, and enter into your own recognisances for two years to be of good behaviour, and that you be imprisoned until such fine be paid and such recognizances entered into.

The terms of the sentence having been complied with, the defendants were discharged.

The trial occupied the Court for nearly twelve hours, and seemed to excite considerable interest among the members of the medical profession, a great number of whom were present.

MISCELLANEOUS

MEDICAL BOTANY.

COMMUNICATED WITH THE VIEW OF CALLING THE ATTENTION OF NATURALISTS TO THE MEDICINAL PROPERTIES OF PLANTS.

By Dr. Castle.

XIII.

SHOWY-FLOWERED MESNA.

An elegant and lofty tree, with very showy flowers, a native of the East Indies. It is the *Mesna speciosa* of Choisy, and belongs to *Monadelphia, Polyandria* of Linnæus, and to the natural order *Guttiferæ* of De Candolle. In altitude it often exceeds fifty feet, and being planted near habitations, its foliage affords an excellent shade. The leaves are long, linear-lanceolate, and rather acute. The flowers are odiferous, about the size and shape of those of the sweet-brier, axillary, solitary, with a calyx of four unequal permanent sepals, and four white rounded regular petals; stamens indefinite, connected at the base; filiments filiform; anthers erect, two-celled, bursting lengthwise at the sides. Style short, crowned by a thick concave stigma; ovary two-celled; each cell containing two erect ovulæ. The fruit is reddish, and wrinkled when ripe, with a

rind like that of the chesnut, containing three or four seeds, which are of the size, shape, substance, and taste of the chesnut. The tree is much cultivated, according to Rhude, in Malabar; produces fruit when of six years' growth, and is said to continue for three centuries after. The dried flowers are frequently used with the white sandal-wood, to impart an agreeable fragrance to cerates and other compounds. The bark, wood, and roots are sweet-scented and bitter, and might be advantageously introduced into practice as an agreeable aromatic, particularly for cases which will not permit of the use of astringent bitters.

I am not aware of the Showy-flowered Mesna having been cultivated with us, but Don, in speaking of the family, considers it worthy a place in every collection of stove plants. Bip. rep. — *Choisy M.SS. ex De Cand. prod.* 1, *p.* 562. *Rhude, mal.* 3. *p.* 63. *t.* 53. *Don syst.* 1. *p.* 622.

XIV.

STRONG-SCENTED POLANISIA.

This pretty annual plant, the *Polanisia graveolens* of Rafin (Cleome dodecandra *var.* Canadensis, *Lin.*) is a native of North America. It belongs to the natural order *Capparideæ* of De Candolle; but from the number of stamens varying from eight to twelve, its exact position in the Linnæan arrangement is not definite; it is usually placed under *Dodecandria Monogynia*. The whole plant, which is commonly above two feet high, is beset with glandular hairs; the leaves are trifoliate; the leaflets elliptical-oblong. The flowers, which appear from July to September, are small and pinkish; the calyx four-sepalled and spreading; petals four; and the seed-vessel an oblong silique, which is narrowed at the base, glandularly muricated and pubescent. The root is reputed in America anthelmintic. Introduced into our botanic gardens in 1820; but like many other tropical plants, it needs a warm and sheltered situation. Bib. Ref.—*Raf. journ. phys. aout.* 1819. *p.* 98. *Bart. fl. amor. t.* 22.

XV.

BILIMBI OR CUCUMBER TREE.

The Cucumber Tree, or as it is popularly called in Malabar, "Bilimbi," is a native of Goa and many other parts of the East Indies; and is now cultivated in several provinces of South America. It is systematically named the *Averrhoa Bilimbi* of Linnæus, and belongs to his *Decandria, Pentagynia,* and to De Candolle's *Oscalideæ*. In size it varies considerable, sometimes being scarcely six feet high, sometimes near to twenty, and is furnished with but few branches. The leaves are alternate, consisting of from five to ten pairs of ovate-lanceolate, entire, smooth leaflets. The flowers are reddish purple, disposed in racemes, rising from the trunk; calyx of five pubescent sepals, which are more or less joined together at the base; petals five, with oval-oblong limbs; stamens ten; ovary angular; styles five, permanent. The fruit is oblong, somewhat like a small cucumber, with a thin, smooth, green rind, five-celled, with a few seeds in each cell adhering to the central angle; seeds not unlike those of the cucumber, without an arib; embryo straight, in a fleshy albumen. The fruit abounds with a highly grateful sub-acid juice, which being properly prepared with sugar, forms a very valuable drink for persons labouring under febrile, bilious and other disorders.

The Bilimbi introduced into our stove houses in 1791, thrives well in a light sandy loam: flowers from May to July; and ripe cuttings will strike root freely in sand under a hand-glass. Bib. rep. —*Lin. spec.* 613. *Cav. diss.* 7. *t.* 219. *Rumph. amb.* 1. *p.* 115. *t.* 35. *Don. syst.* 1. *t.* 121.

COMPLETE MEMOIR ON

PHTHISIS LARYNGEA,

EXTRACTED FROM THE UNEDITED WORK OF MESSRS. TROUSSEAU AND BELLOC, FOR WHICH A PRIZE WAS AWARDED BY THE ACADEMY OF MEDICINE IN PARIS.

What is meant by Phthisis Laringea? What are its Organic Alterations? its Causes? its Species? its Termination? What is its Treatment?

CHAPTER I.

ON DEFINITION.

The word *phthisis* signifies consumption. Any organic alteration which may give rise either to marasm, or hectic fever, is, properly speaking, a phthisis, to whatever cause that disease may be attributed.

Some modern authors have exclusively applied the word phthisis to a tuberculous affection of the lungs; in our opinion thit is an error, and the Academy seems to agree with us in this respect. It is evi-

dent, from its association of the words Phthisis Laryngea, that allusion is made to the chronic disease of the larynx, which if not exclusively, at least principally, gives rise to hectic fever and consumption.

The exact definition of Phthisis Laryngea should therefore be chronic affection of the larynx, which may also give rise to consumption.

But the disease to which we now give our attention is seldom followed by actual consumption, as the anatomical disposition of the parts often causes death by suffocation. The patients may, nevertheless, be considered as victims, as, without the alteration of the larynx, suffocation would not have taken place; and then if this disease had not caused the obstruction of the air passages, and consequently asphyxia, the sufferers would have gone through all the stages of marasm.

These considerations prove that our definition requires a broader basis than the one already given, and we have fixed on the following:

By Phthisis Laryngea is meant any chronic alteration of the larynx, which may give rise to consumption or death.

Galen is the first author who treats of chronic affection of the larynx: but none of the symptoms he indicates, in the two single cases he relates, can be really considered as belonging to Phthisis Laryngea.

Whatever may be the opinion of modern authors, it is certain that Ætius merely copied Galen. They both considered the diseases in question easily cured. Ætius says he cured a great many (non paucos hoc modo affectos curavimus).

Morgagni gives various accounts of chronic diseases of the larynx, and we are indebted to him for the earliest cases that positively belong to Phthisis Laryngea. Yet this author no where establishes the existence of Phthisis Laryngea as a special disease, which may end fatally, except by suffocation.

Borsieri is the first who positively asserts that the larynx and the trachea may become the seat of ulceration, which may engender hectic fever and death. His opinion in this respect is clearly expressed in the paragraph of his work, which we have chosen for an epigraph. (Inst. Med. Prat. tom. iv. p. 57.) But Borsieri, notwithstanding the opinion of his great admirer, Joseph Franck, has described the Phthisis Laryngea more theoretically than practically. Many of the symptoms which he indicates as characteristic of the disease are frequently wanting. Franck himself admits this to be the case, and there are also many very important symptoms of which he makes no mention.

Besides these authors, some French practitioners have written on the ulcerations of the larynx and trachea. The most remarkable are Messieurs Double, in 1806, Cayol, 1810, Pravaz, 1824, and, finally, M. Louis, who, in his work on Pulmonary Phthisis, has published the alterations of the larynx in tuberculous patients, which researches are extremely valuable, and merit entire dependence.

CHAPTER II.

ORGANIC ALTERATIONS.

In this chapter we shall treat not only of the alterations of the larynx, but also of those in the pharynx and trachea. Nevertheless we shall merely give our attention to diseases not immediately connected with the larynx, when it is necessary to elucidate some disputed points connected with the history of the Phthisis Laryngea.

We shall divide the diseases of the larynx in two great classes; 1st. Those that affect the mucous membrane. 2nd. Those that affect the cartilaginous rings beneath the mucous membrane.

Redness and Swelling.—The redness of the tissues after death is generally considered as a symptom of previous inflammation. This is undoubtedly the case, but, in our opinion, the fact of there being sometimes no traces of redness on the corpse, in the parts which, during life, were the seat of intense inflammation, has not been sufficiently noticed. The same observations are applicable to the swelling. Do we not, as soon as life is extinct, often see erysipelas and chemosis turn pale?

These observations often find their application in diseases of the larynx. We have seen patients victims to inflammation of the throat and larynx, and yet those parts that were the seat of marked inflammation and tumefaction, at a post mortem examination, were found livid. In these cases may we not naturally conclude that organs which could not be seen inflamed on the living body, though inflammation was suspected, might owe their paleness to the fluids that run beneath them.

But if redness and swelling sometimes entirely disappear after death, when they exist, their value is commensurately high. Sometimes the upper part of the larynx

is of a deep red, and so hard and tumefied, that it is similar to the neck of the uterus. In our own practice we have merely met with one instance of the kind.

The spotted redness so common on the inflamed tracheal membrane is seldom perceptible on the epiglottis and in the larynx. This probably depends on the lesser vascularity of the latter, whose mucous membrane is naturally dense and pale.

Ulcerations.—We shall divide the ulcerations of the mucous membrane of the air passages into erosions, and what are commonly called ulcerations. The first merely relate to the mucous membrane, the second to the cellular mucous, or even to the fibro cartilaginous tissue.

Erosions.—In erosions the mucous membrane appears as if worn out, the flat borders gradually unite with the healthful part, so that it is impossible sometimes to discover the line of separation. But if the part be placed in water, the surface of the erosions is covered with a villous coat, similar to that found in animals of the canine species, and which never existin the mucous membrane of air passagesin man, excepting where the epithelium has been destroyed.

Erosion does not appear to us to be the first degree of ulceration. It often happens that there are numerous and considerable erosions without ulcerations; and, again, there are frequent, deep ulcerations, in parts where no erosions are evident. In one of the patients, whose whole case we have related, and whose larynx and trachea were delineated after death, the correctness of this observation is easily ascertained; for the mucous membrane which covers the thyroid cartilage is converted into a multiplicity of ulcers, while on that which covers the thyroid cartilage there is no trace of erosion, and the trachea is covered with an innumerable quantity of erosions, but has no ulceration.

We have never observed erosions of the mucous membrane of the larynx and trachea excepting among individuals, who besides the affection of the larynx, were afflicted with pulmonary phthisis. Is this fact to be considered as a confirmation of Mr. Louis's opinion, who believed these erosions to be due to the action of expectoration? We must admit that we have not sufficient materials to decide this question; but we beg to state it appears more rational and satisfactory to attribute this lesion to a tuberculous diathesis, whose influence in the production of ulcers of the ileum in phthisis must be undeniable.

Ulcerations.—We shall not describe ulcerations of which the form is generally known.

We have seen this species of affection invade the whole larynx, the vocal chords, the aryteno-epiglottic ligaments, and the mucous membrane which covers the epiglottis. Sometimes these ulcerations reach the cartilages, which they corrode and decay. In most cases the mucous membrane is alone destroyed, and seems evidently to be the cause of the disease; but it also frequently occurs that there are abscesses under mucus; the ulceration is then made as certain fistulous sores under the skin. We have given several cases of this sort of affection; among others one from Morgagni, Letter 15, Art. 15, and a second collected by Dr. Carmichael, and published in the Irish Transactions, 1820.

Alteration of the Cartilages. Ossification of the cartilages of the larynx, which is a normal phenomenon when the individual has arrived at a certain age, often arises if the vocal organ has long been the seat of chronic inflammation. But the cartilages need not be affected with caries, the slightest ulceration, the slightest chronic inflammation of the mucous membrane which surrounds them suffice.

Analogy may be very useful in explaining this phenomenon. Is not the periostium of a bone often infiltrated with a species of bony matter, near a fistula of long standing? And when a young woman falls a victim to an ulcerated cancer of the breast, do not the perichondrium, and even the cartilages surrounding the ulcer, leave traces of ossification not existing on the opposite side?

The pathological mode of ossification of the cartilage of the larynx is not the same as that of the normal ossification of the fœtus. The whole breadth of some parts of the cartilage is ossified; from thence proceed two thin bony layers, between which the cartilaginous portion remains. If the part be then submitted to ebullition, the cartilage comes off the bone exactly like an epiphysis.

Several of these bony parts are generally found in the same cartilage, but complete ossification only takes place at an advanced period of life. The cricoid cartilage is most frequently ossified, then the thyroid. We have never found the arytenoid cartilages ossified.

Necrosis.—The necrosis of the cartilages of the larynx is far more frequent than most authors who have written on this subject generally suppose; it may be known by the following characters:—

1st. The necrosed part is constantly denuded, as, according to the laws of organization, the separation of the dead from the living parts must take place: the sequestrum may be then rejected by the mouth, of which we have given remarkable examples; or, what more frequently occurs, it is retained, and causes fatal disorders.

2nd. The necrosed part is always ossified; this character never fails when the disease is of long standing: and it is well known that, in dangerous fevers, necrosis of the cartilage of the larynx sometimes takes place without ossification.

The production of this phenomenon seems to originate in the following manner:—

The ulceration, which most frequently causes necrosis, begins by producing an inflammation of the perichondrium, and consequently, according to the law already established, a bony effusion in the subjacent cartilage, and when the ulceration has reached the bony cartilage, necrosis easily takes place, ossification having deprived it of a great portion of its vitality.

What renders this explanation more plausible, is the well known fact that, in young subjects, ossification is difficult, and that necrosis is not found, but caries. We must also remark that the arytenoid cartilages, which we have never seen ossified, have never been found necrosed.

Caries.—This alteration has appeared to us less frequent than necrosis. It is always the result of an ulceration commencing on the mucous membrane, and has destroyed in a few months, sometimes in a few weeks, the cellular tissue, which separated it from the cartilage. Caries can completely destroy the epiglottis, of which Joseph Franck, and M. Louis have related several cases. It can even perforate the thyroid cartilage, of which we have given two examples, and even leave no traces of arytenoid cartilages.

We have never met with patients subject to caries, unless previously attacked with tuberculous pulmonary phthisis: it is not so with necrosis. This is a characteristic which places a striking line of demarcation between these two species of alterations.

The pathological lesions, of which we have given a rapid sketch, create in all the adjoining parts disorders more or less remarkable. The most serious and the most frequent is undoubtedly the tumefaction of the mucous membrane, which is followed by the occlusion of the respiratory tube. In our opinion it was useless to make a special disease of that sort of swelling, called œdema of the glottis. Further on we shall give an exposition of our own views on this subject.

Foreign bodies existing in the larynx.—Foreign bodies, of different nature, are often sometimes found in the larynx; they may have been formed in the organ itself, or introduced into it.

Foreign bodies formed in the larynx.—Lieutaud, Bonnet, Mogagni, Desault, Pelletan, &c., have given to science very curious facts of this nature. Polypusses, vegetations, cancerous tumours, hydatids, false membranes, more or less extended, have been found in the larynx. There are examples of stones found in the cavity of the larynx, and thus preserved a long while. It is easy to foretel the accidents that may be occasioned by these morbid productions, not only on the local pain they cause, but they also prevent free respiration.

Introduction of foreign bodies into the larynx.—We have nothing new to relate respecting the accidental introduction of foreign bodies into the larynx. The multiplicity of cases of this kind render any comment of ours unnecessary, and could only tire our readers.

Should Phthisis Laryngea be separated from Tracheal Phthisis—We have replied negatively to this question for the following reasons:—

1st. These two lesions have the same origin and the same causes.

2nd. They are frequently simultaneous in the same subject.

3rd. The accidents they give rise to are of the same nature.

4th. The treatment is nearly similar.

CHAPTER III.

CAUSES.

Phthisis Laryngea is not a special disease, but may be caused by various lesions of different nature. Owing to the organ they attack, and the functional symptom they produce, the well-known denomination of Phthisis Laryngea has been applied.

It is therefore next to impossible to study the causes which may give rise to it; for it would be necessary to review the whole of Nosology.

We have, in fact, seen Phthisis Laryngea produced by screaming, by forcing the voice too much, immoderate coitus, masturbation, exterior violence, cancer,

tumours of different nature developped on the larynx, and we have given examples of all these different cases.

Besides these different causes, sex and age have great influence on the development of the Phthisis Laryngea.

Age.—Nearly all the individuals mentioned by ourselves, and other authors, were at least 20, none above 50: the principal number were between 30 and 46.

Sex.—According to Mr. Jones and M. Louis's observations, it follows that among tuberculous individuals the alterations of the trachea and larynx are twice as frequent among men as among women.

The observations respecting sex or age are well reconciled; women are much less subjected to alteration of the vocal organs than men; and children, whose constitutions have great analogy with women's, seem to share the same immunity.

CHAPTER IV.

We have divided Phthisis Laryngea into four kinds:

1st. Simple, viz. that produced by the common causes of general phlegmasia.

We acknowledge the first kind not only from our own observations, but from those of the most noted men, among whom are M.M. Double, Portal, Louis, and Andral.

2nd. Syphilitic. That due to venereal ulcers, either primitive or consecutive, and whether they, in the first instance, attack the larynx, or are propagated from the pharynx.

3rd. Cancerous. That which depends on the development of a cancerous tumour in the larynx.

4th. Tuberculous. That which shows itself after the existence of pulmonary tubercules have been proved.

We have seen a case of Phthisis Laryngea partaking of the nature of herpes, but we do not think a single case will suffice to establish a fifth species.

(To be continued.)

EPEDEMIC FEVER OF THE WEST INDIES.

(Continued from p. 972.)

The whole case is given in an Appendix to the Report, and which was transmitted to the Director General of the Army Medical Department by the present Deputy Inspector Griffin. I mention these facts to show that long practical experience places in our hands medicines well calculated to facilitate the favourable termination of this malady, even in its worst forms; and I have brought forward an old, known, and efficacious practice, namely, that of mercurial fumigation, so that even in apparently desperate cases, the patient may have a fair chance of being saved by a little exertion of the experienced medical practitioner, although I look to the measures I have previously detailed as the grounds in the early part of the contest. The mercurial fumigation is performed with a preparation of calomel and sulphur, or it may be simply done by placing a drachm of pilula hydrarg. on a piece of tile put over some embers in an earthen cup; the cup is to be kept on the ground just between the patient's legs, he himself being enveloped in a blanket. It may be useful here to remark, that when I prescribe calomel in the fevers of the Antilles, and few practitioners have been more successful with this valuable remedy in the appropriate fevers, where indeed it is our sheet anchor, I have always despised the cry made by certain physicians against large doses of calomel, knowing how soon disorganization takes place in the West Indies; if Sydenham in his day could order twenty grain doses in England, the Colonial medical attendant in 1836 will soon learn that the dose to ensure success must be increased in these islands, where the intestinal tube frequently resists the strongest medicine in exciting its daily functions, and by that finally restoring the biliary apparatus to energetic and healthy action. Small doses of calomel ought therefore to be avoided. Where such doses have been thought to answer, it is probable that the cases would equally have recovered without a single grain of calomel. I am proud to bear testimony to the usefulness of this distinguished medicine, for I am very far from being a non-mercurialist, except at the beginning of the aggravated Asthenic remittent fever, which is the immediate subject of these pages.

Patients labouring under this variety of the fever should be seen every two or three hours during the first and second day, otherwise much good cannot be anticipated, nor can the remedies be given judiciously. Narcotics are remedies from which considerable advantages may be derived; when the bowels are inclined to costiveness, I give ten grains of Extract. Hyosycam. in half an ounce of the Liq. Ammon. Acet. flavoured with syrup of

orange, or if the bowels are in a pretty soluble state, or where there are cerebral symptoms, the Liquor Morphinæ Acetatis will be preferable; yet, in cases where there is watchfulness, great prostration of strength, with a low and irregular pulse, the countenance being pallid, I find small doses of Laudanum, in a few spoonsful of Negus, frequently repeated, to be as effectual in morbid derangements, and exciting the system into healthy action, as any other medicine we possess; I mean after a powerful impression has been made on the disease by the means I have already proposed. Still, if we prescribe narcotics, so as to induce refreshing repose, they ought to be given not sooner than eleven o'clock at night, a time when the fever is observed to be somewhat on the decline, at any rate, the skin is generally at this period moister. To assist the purgative medicines, taken at the onset, Enemata will be often required; that made of oil of turpentine, with castor oil, I believe to be the best for our purpose; turpentine having a particular property of subduing irritation in the intestinal canal, inducing therein the ordinary salutary action. If there should be pain at the lower part of the abdomen, which is a frequent symptom about the beginning of the third day, sixteen ounces of the Enema Nutritivum made of Tous le Mois and warm water, thrown into the rectum every third or fourth hour, as warm as the patient can comfortably bear it, will remove this unpleasant feeling. In two patients an injection of brandy and warm water was used, with marked and immediate benefit. Where there is a visible dryness and constriction of the skin over the body, especially about the umbilical region, and which had not yielded to the baths, heated oil of turpentine was applied to the surface, in way of rubefacient, with good consequences.

I administered the strychnine and Hydrocyanic acid in this epidemic, as well as in the Trinidad Cocorite fever, having observed that in both fevers the stomach seemed to be that particular organ of the Ganglionic system, which, in the progress of the disease, showed evident signs of derangement; so that the strychnine and Hydrocyanic acid, timely and judiciously given, preserved that important organ from morbid action, ensuring the due balance of the nervous system, if I may so express myself. In such instances no fatal black vomiting took place.

My reason, likewise, of persevering in the ptisna camphorata, in which I increased, according to circumstances, the spirit of nitric œther, was the knowledge I had of the great sympathy existing between the brain and the urinary organs, and where there is lessened secretion of urine, the head is generally affected, but which is invariably relieved on the restoration of the secretion, therefore I ordered the ptisana camphorata, in conjunction with my other measures.

In some places the atmosphere had an epidemical character, the fever running, in such places, nearly through the whole of a family; the force and form of the fever depending, however, in a great measure, upon the previous good or ill health of the person attacked. One thing was quite certain, that whenever a family was so affected, a remove, to the distance of only two fields from the locality of the attack, caused an almost immediate disappearance of the fever. This favourable result was not surprising to me, having, during my long period of service in the army, invariably observed that regiments assailed with malignant remittent fever, have experienced similar benefit on a removal from barracks to tents, scarcely two hundred yards distant from each other. The fever has, I understand, been rather formidable in its assaults among the military quartered in this island. Report giving no less than ninety-five deaths in His Majesty's 14th Regiment. This number is probably exaggerated,* as I think, from the well-known experience of the medical officers, that if such a mortality had taken place, the establishment of open encampments would have been resorted to. I intended to have given several detailed cases of this fever, but time will not permit, as the merchant vessel which takes this communication is to sail for England in a day or so; and this circumstance has made the present report shorter and more hurried that it otherwise would have been.

J. B. Waterson,
Late Surgeon to H. M. Forces and to the 19th Regiment.

P. S. I have had no case of dissection, and I ought to state that my practice was most successful.

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* Since writing the above, I am assured from the best authority, that the number of deaths is correct, as will appear in the returns sent home to the War Office.

ANALYSIS OF A BILIARY CALCULUS.

By M. de Koninck.

Read before the Royal Academy of Sciences of Brussels, on the 6th of August, 1836.

This Calculus was remarkable, not only for its size, but also for the manner in which it was expelled from the body of the individual in whom it formed. It seems to have originated in the bile of a person for nine years labouring under abscess in the right hypochondrium, occasioned probably by its presence; for since the calculus came away by the natural passage, he has completely recovered, and the sore cicatrized.

The calculus has an ovoid form, somewhat elongated, flattened towards the base. Its surface is remarkable for certain depressions, produced, most likely, by the resistance of the envelope which retained it. It does not offer those smooth facets commonly observable on biliary calculi, generally the result of their mutual friction. This circumstance leads to the inference that here the calculus was solitary. The colour of it is a yellowish-olive, slightly white towards the base; that of the depressions more deep; the odour is agreeable, resembling that of ambergrease. In specific gravity it is less than water: sawn across the middle it did not exhibit any nucleus which might have given it birth. From the centre to the circumference there proceeded radii, formed by minute crystalline laminæ, transparent, of a faint yellow tinge. The crystalline nucleus was enclosed in a crust of the same substance, not crystalline, but more compact; its aspect was whiter. This crust which had only from 1 to 1½ *millimètre** in thickness, in nearly all its extent, was from 2 to 2½ *millimètres* thick near the apex, and there existed in that situation a small cavity between it and the crystalline nucleus. This cavity was filled with the yellow colouring matter of the bile. The greatest diameter of the calculus is 21½ *millimètres*; its height 43 *millimètres*; its weight 160·5 grains; its chemical composition as follows:—

Cholesterine	94·95
Yellow-colouring matter of the bile	1·41
Carbonate of lime	1·00
Picromel	2·43
Volatile oil and loss	0·21
	100·00

* A *millimètre* is 1-25th of an inch.

As this composition corresponds with what the greater number of chemists have found to be that of biliary calculi, removed after death, it may be fairly presumed to have had the same origin.—*Bulletins de l'Academie Royale des Sciences, Bruxelles.* 1836. p. 279.

SIR HENRY HALFORD'S FORTUNATE ESCAPE.

We congratulate the profession that the life of this truly eminent and enlightened physician has been saved, after the late serious accident to which he was exposed. Most providentially, when the carriage broke down, his person was rescued; and, except some slight contusion and shock, he has not suffered. Had the College been deprived of his distinguished services, there is no man living who could have graced the President's chair like Sir Henry. We rejoice to add, that though he has entered upon his 71st year, his mind remains vigorous, and possesses the activity and acuteness of youth.

MEDICAL MEETING, AT CORK.

At a numerous and respectable meeting of the Medical Profession, held at Lloyd's Hotel, on the 24th ult.

John Woodroffe, Esq., M.D., in the chair.

The following Resolutions, as prepared in Committee were unanimously adopted:—

1st. That we regard with serious apprehension, the contemplated measure of placing the Medical Charitable Institutions of Ireland under the control of the English Poor Law Commissioners; because we conceive the present system of relieving the sick paupers in England to have totally failed in its object, and to be altogether inapplicable to the circumstances of this country.

2nd. That if the Bill for the introduction of Poor Law into Ireland, which has been read a first time in parliament, be carried into operation, confining legal relief to the workhouses, and leaving the support of the medical institutions for the sick poor dependant on voluntary contributions; that the existing medical charities must be extinguished for want of necessary funds, and the poor be thus deprived of medical attendance.

3rd. That the deputation at present in London, Doctor Nugent of Cork, and Surgeon Phelan of Clonmel, have fully

justified the trust and confidence reposed in them by the profession, and that we pledge ourselves to use every exertion to enable them to persevere in their arduous and useful exertions of obtaining for the sick poor of Ireland the inestimable advantages of a well regulated system of medical relief.

4th. That Dr. Johnson, the editor of the *Medico Chirurgical Review*, and Dr. Ryan, the editor of the *London Medical and Surgical Journal*, are entitled to the warmest thanks of this meeting, for their very kind reception of, and effectual aid afforded to the deputation, and that our Secretary be requested to convey the resolutions to these gentlemen.

5th. That the best expression of our thanks be also conveyed, on the part of the medical profession of the province of Munster, to the British Medical Association, for the sympathy and good feeling they have evinced, and the co-operation they have offered, for promoting the objects of the deputation.

Dr. Woodroffe having vacated the chair, and Dr. Callanan having been called thereto, it was

Resolved—That the best thanks of the meeting be accorded to Dr. Woodroffe, for his dignified and proper conduct in the chair.

A. H. Callanan, M.D, Chairman.

Richard Corbett, M.D. } Secretaries.
Julius B. Evans, M.D. }

Sentence on Mr. Penrudduck.—The Apothecaries' Company are accused by Mr. Phillips of having induced Mr. Penrudduck to plead guilty to an aggravated assault, and then declined to appeal to the Judge in mitigation of punishment. The sentence of the Court was, twelve months imprisonment, and to give bail in the sum of 200*l.*, and two sureties in the sum of 100*l.* each.

Such is the humanity of the Rhabarbarians, even in a case where the health of a fellow citizen is endangered, and where it would have been much more noble to interpose, than to punish with great severity an individual whose excited feelings led him to violate the law.

Poor Laws.—The Board of Guardians of the Eastbourne Union, on advertising for medical tenders for the ensuing year, have not received one from the medical attendants of the last year; and when it shall be publicly known what the offer to medical gentlemen, according to the orders of the Commissioners, is, it must appear wonderful that any person of liberal education should have condescended to receive them. The advertising is only a blind, as the Guardians have no power to accept a tender above the following amount. For medical attendance on each division of the Union, *four pence* per head on the pauper population of the district!—which did not yield one shilling a year, at which rate the late medical attendants were great losers.—*Brighton Gazette.*

At a meeting of the medical profession of Cheltenham and its neighbourhood, on Wednesday, to take into consideration the effects of the new Poor Laws upon that body, the following resolution was unanimously adopted: "That the system adopted by the Poor Law Commissioners, in providing medical relief for the poor, is degrading to the medical profession, inefficient as regards the sick paupers themselves, and productive of effects equally as pernicious to the community at large."—*Cheltenham Chronicle.*

A meeting of the surgeons residing in Mansfield, Alfreton, and Ollerton, was held on Monday, at the Swan Hotel, Mansfield, when an address to the Legislature was determined upon, recommending in express terms the substitution of some other mode of electing surgeons to the charge of the sick poor less derogatory and insulting to the profession at large than the one now in use.—*Derby Mercury.*

Chlorine Gas.—Dr. Deblois, of Tournay, employed an injection of chlorine gas, with the view of effecting a radical cure in hydrocele. The process is thus described: the chlorine gas is contained in a bladder having a pipe and stop-cock affixed, which can be readily fitted into the canula of the trocar, when the fluid of the hydrocele has been drawn off; the stop-cock is then turned, and by pressing the sides of the bladder, the gas will be forced into the tunica vaginalis. When this sac was fully distended, M. Deblois removed the pipe and bladder, and covered the open end of the tube with the thumb, retaining the gas in the cavity for two minutes. It was then allowed to escape, and the injection repeated two or three times, by which means a cure was effected. The advantages are, the simplicity of the apparatus, and the equal distension of the whole sac.—*Bulletin Médical Belge.*

Distilled Water of the Acacia Flowers.—A water has been obtained from the flowers of the Acacia by distillation, by Messrs. Chevallier and Favrot, which is said to possess the property of exciting nausea and vomiting. Its medicinal powers are undergoing investigation by M. Bricheteau. It is recommended in the Pharmacopœia Helvetica, as useful in cases of debility, obstruction of the bronchi by mucus, catarrhal hoarseness, and cough. Messrs. Chevallier and Favrot prepared it in the first instance, according to the directions of the Swiss Pharmacopœia by pouring three pounds of water on a pound and a half of the flowers, macerating for twelve hours, and then distilling on an open fire, until a pound and a half of the water had gone over. The product was very analagous to that of the lactuca virosa—its taste was slightly acrid. Conceiving that this might depend on the mode of distillation, an equal quantity of the flowers was placed in a metallic cloth, and introduced into an alembic, containing three pouuds of water, so as to be suspended over it, and not immersed in it. As the distillation proceeded, the steam arose, and passed through the flowers. The product had less of the virose odour than the preceding. The dose is from one to two ounces sweetened.—*Journal de Chemie Medicale et de Toxicologie.*

Tinctura Copaibæ.—From a series of experiments made on the balsam of copaiba, it appears that a preparation in which calcined magnesia is triturated with the balsam, and the mixture after digested with proof spirit, will prove the best mode of administering this nauseous drug in the treatment of the various diseases for the removal of which it is applicable, both as regards the concealing its unpleasant taste and its action on the system. It is made by rubbing up twelve ounces of copaiba with six of calcined magnesia, allowing the mass to stand for a day, and then digesting it in a pint of proof spirit. When the balsam is dissolved, filter, and add half an ounce of nitric spirit of ether. Of this the dose will be ʒj to ʒiij two or three times a day. The liquid is at first transparent and colourless, but in the course of time assumes an amber tint; it possesses an ethereal smell, its taste is balsamic, with a slight copaibal after taste. —*Medical Botanical Society.* M. Faure of Bordeaux, in a article published in the *Journal de Medicine Pratique* for 1830, was the first to draw the attention of the medical profession to the combination of copaiba with magnesia.

LITERARY INTELLIGENCE.

The success of some new journals, has stimulated some enterprising individuals to bring out another periodical, to be called the *Medical and Physical Pickwick*, published by Churchill. *Boz!*

TO CORRESPONDENTS.

Quackery Dinner.—The price of the dinner ticket is a guinea, but we cannot inform our correspondent whether wine is included. The particulars may be learned from any of the Stewards.

T.—Our Dublin Correspondent has forgotten his promise. He is not aware that a former article produced effects which we did not anticipate.

A Student of St. Thomas's.—The prosecution ought never to have been instituted; it will do the Medical Staff of the Hospital much more harm than good, and is in strict accordance with their antiquated, and still cherished, folly.

A Student of the North London Hospital.—Our Correspondent writes on a subject with which he is unacquainted.

A Governor of St. Bartholomew's Hospital.—The writer of the letter thus signed is in too great a passion; but we shall have much pleasure in publishing his letter, with our remarks, if he will favour us with his name and address, confidentially.

Freedom.—A Weekly Medical Journal is a medical newspaper, and ought to contain an account of passing events. It differs, however, from the public press in one respect, in containing a large proportion of scientific and practical matter, appertaining to a certain profession. If our contemporaries do not supply so much intelligence as we do, it is their affair and not ours.

Onsor.—The author is a qualified quack.

B. L.—The report of the intended migration of the Surgeon-General for Ireland to this metropolis is as unfounded as that circulated some months ago, that Mr. Wallace was coming to settle in London under the patronage of the hon. member for Finsbury.

Scrutator.—The account of the Liverpool ballot, though correct in all its statements, is too personal in its present form for insertion in our pages. In all the Medical Societies of London, the usage is, at annual election of officers, that the ballot-box should be examined by *three scrutators*, proposed by the President, after the conclusion of the voting, in order to avoid *mistakes*.

THE

London Medical and Surgical Journal.

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XVIII.

SENSATION.

Animal Magnetism—Experiments of the French Commissioners—The Commissioners Magnetized — No Effect produced—Conclusions at which they arrived—Effects of Imagination—Production of Crises and Convulsions—Effect of Manipulations — Imagination does Everything, and Magnetism nothing—Non-existence of the Magnetic Fluid—Experiments by M. Sigault — Effects proportioned to the Faith and Sensibility of the Patient—Cure of an Artist by Mummery—Cajoling a Patient—Effect produced on an Aching Tooth by the sight of the Dentist—Experiments in a Convent—Magnetizing a Nun—Ceremony of the First Communion—Rapid Spread of Convulsions among the Young Ladies—Cases of Alleged Effects independent of Imagination—Uneasiness and Agitation produced by a concealed Iron Rod — Convulsions produced during Sleep, by Motions before the Face—Experiments with a Patient in a Crisis—A Finger felt at Six Inches distance—Convulsive Twitchings produced by it—Startings produced by Motions at a Distance—Effects of Pressure on the Epigastric Region—Attempts of incredulous Practitioners—Jussieu, on the Medical Application of Animal Magnetism—Effect on Suppressed Perspiration—Case of a Female Servant—Effect of Magnetism on Opacity of the Cornea—Cure of Ague by Animal Magnetism—No Effect on Phthisis Pulmonalis — Little Influence on Scrofulous Tumours—Alleviation of Dropsical Symptoms—No Influence on Ascites—Little Diminution of Abdominal Enlargement—Better Success in Recent Paralysis—Case of a Washerwoman—M. Deslon's Practice in Vomiting of Blood—Connection between Magnetism and Electricity—Dr. Vazer's Experiments—The Magnetic Fluid bottled up—Effect of Imitation—Cold produced by a Warm Hand.—Cold and Heat produced by Magnetism—Explanation of its alleged Odour—Effects of Magnetism on Asthma, Tumours, Scrofula, Cholera, and Hernia.

The commissioners instituted a great variety of experiments, varied in every possible form; and with the view of putting it to a personal test, they submitted to be magnetized themselves. No effect, however, was produced. The conclusion to which they arrived, after all their investigations, were the following: "1. Imagination is sufficient to produce all the effects attributed to magnetism. 2. Magnetism produces nothing independently of the imagination. 3. Imagination is the agent which *produces* the crises. 4. Imagination acts equally in putting an *end* to the crises. 5. Imagination does everything, and magnetism nothing. 6. Imagination produces greater effects in public than in private; because the impressions and movements are communicated from one to the other. 7. The manipulations which the patients undergo serve to excite the imagination; and the effects spread by imitation. 8. This excitement of the imagination is hurtful, when it produces violent and convulsive effects. 9. These convulsions may become habitual, and spread through the country. 10. The magnetic fluid does not exist at all; and the means which are employed to put it in action are dangerous."

M. Sigault, the inventor of the operation called *Symphiseotomy*, gives some striking proofs of the effects of imagina-

tion; as will be seen by a letter, from which I translate the following extracts. "Being on a visit at Marais, I allowed it to be thought I was an adept in animal magnetism; and produced various effects on a lady there. The tone of my voice, the serious air which I put on, together with my gestures, made a great impression, which she endeavoured at first to conceal; but having placed my hand on the region of the heart, I perceived that it palpitated. Her state of oppression was further indicated by constriction of the chest. To these symptoms others were soon added. The face became convulsed; the eyes rolled; she became faint; vomited her dinner; had several evacuations from the bowels; and fell into a state of extreme weakness. I repeated the same process with several other persons; and with more or less success, according to their degree of faith or sensibility.

"A celebrated artist complained, for several days, of a nervous pain in the head. Having persuaded him that I had been initiated into the mysteries of M. Mesmer, I removed his pain very quickly, to his great surprise, by means of a few gestures.

"I produced the same effects on a young man, likewise attacked by pain in the head; but as he felt nothing from the gestures I first made, I placed my hand over the false ribs, desiring him to look at me. He was immediately seized with general uneasiness, yawning, oppression at the chest, and palpitations. From that moment he did not doubt the power I had over him. Applying my finger to the part affected, I asked him what he felt. He replied, that the pain was getting lower. I told him I was going to conduct it into the arm, and make it come away through the thumb, which I squeezed tightly. He believed what I said, and was free from pain for two hours; at which period he stopped me in the street, and told me his malady had returned. The effect appears to me to be analogous to that which is produced by the mere sight of the dentist on those who come to have a tooth extracted.

"Lastly, being in the parlour of a convent in *Fauberg Saint Germain*, a young lady said to me, 'You go to M. Mesmer then?' I replied, 'Yes; and I can magnetize you through the grating!' At the same time I presented my finger towards her. She was alarmed; felt uneasy; and begged me to desist. She was so strongly affected, that had I persisted, she would certainly have been seized with convulsions."

A striking instance of the rapidity with which convulsions, when once manifested, spread among the spectators, is found in the following fact which occurred at the church of St. Roch, at Paris, in 1780. "On the day in which was performed the ceremony of the *First Communion*, after the evening service, the customary procession took place as usual out of doors. Scarcely had they re-entered the church and returned to their places, when a young girl was seized with convulsions, which spread with such rapidity, that in half an hour, fifty or sixty girls (from twelve to nineteen years of age) were affected with them. A few cases occurred during the week; but on the Sunday following, being assembled at school, twelve were seized with similar convulsions; and no doubt more would have been affected, had not all the scholars been immediately sent home to their parents. They were obliged to increase the number of schools; and by thus separating the young persons, and having only a small number together in one place, three weeks were sufficient to dissipate entirely these epidemic convulsions."

One of the commissioners did not agree in the report of his brethren; and gives the following among other instances, of effects produced independently of the imagination. "Placed on one side of the trough, opposite to a female patient whose blindness, occasioned by two very thick cataracts, had been ascertained (a month previously) by the commissioners, I saw her remain quite tranquil for a quarter of an hour; appearing to be more occupied with the iron branch directed towards her eyes, than by the conversation of the other patients. At a time when the noise of the surrounding voices was sufficient to distract her hearing, I pointed an iron rod towards her stomach, at the distance of *six feet*. In three minutes she became uneasy and agitated, and turned round in her chair, feeling assured that somebody, placed behind or at her side, was magnetizing her. Her restlessness ceased almost immediately on discontinuing my manœuvre. A quarter of an hour afterwards, I tried the same plan, with the same result. I was assured that the patient had received no further benefit from her treatment, than that of being able to see confusedly objects placed at a distance of *three* or *four inches*, and, besides, the dusk of the evening had come on." In order to ren-

der this case satisfactory, we ought to have a more accurate account of the state of the patient's vision.

The following anecdotes are to the same effect. "A patient whom magnetism put into a profound sleep, for a longer or shorter time, exhibited at intervals (without waking) a fugitive convulsive starting, particularly excited by any unusual noise in the room; such as the clanking of two pieces of iron, or the cry of some patient in a *crisis*. I succeeded in producing a similar convulsion, by means of movements performed at a little distance from his face. I tried the experiment several times, and almost always with success; observing, at the same time, that no strange noise unconnected with magnetism, produced the same effect." The state of this patient was probably that of magnetic *somnambulism*, in which persons are susceptible of many impressions to which they are insensible when awake.

"The *crisis* of another patient consisted of a general spasmodic affection; accompanied with temporary loss of the senses, without any violent motion. The head was thrust forward; the eyes were closed; the arms carried backwards, and stretched out at full length; the hands open; and the fingers widely separated. On applying my finger to her forehead, between the eyes, it appeared to give her some relief. If I drew it away gently, her hand (although not in contact with it) followed it mechanically in all directions. If, after having thus drawn her hand to the *right* side, I presented my other hand within an inch of her *left* hand, she drew it away precipitately. These movements were repeated three or four times within ten minutes; after which the spasm diminished. and the sensibility was no longer so great. I tried the experiment only once; because I had seen the same phenomena produced by another physician, a month previously. When the spasm was over, the patient did not know what had passed." The last-mentioned fact (ignorance of what had occurred) confirms the opinion that the state of this patient also was near akin to that of *somnambulism*.

"The slight magnetic motions made so great an impression on another patient that when I passed the finger along the back, at the distance of six inches, without her being previously aware of it, she was suddenly attacked by convulsive movements and repeated startings, which announced to her the action which was going on, and lasted as long as the action itself.

"The rooms contained several other patients, of both sexes, and of more or less irritable constitutions, who likewise felt, though less vividly, the effects which I have just related; especially when excited by pressure over the region of the stomach. If a finger was moved about unawares to them, over the head, or along the back, without touching the parts, or even at some distance, they often started briskly, and turned round to see what was practising upon them. This involuntary and unexpected motion was excited especially by medical men, who had but recently commenced their attendance, who, before executing openly the ordinary manifestations, stayed out of the circle of patients; testing covertly, and with distrust, the properties of an agent newly revealed to them. Emboldened by success, they afterwards entered into a more extended trial of its powers. I produced this effect very frequently when I first attended; but, suspecting either that the patient was aware of my intention, or that the motion would take place without me, I remained a long time behind two patients, waiting for favourable opportunities of making the trial. It almost always succeeded; and when I did not act, no starting took place. I have sometimes seen the same effects produced by other magnetizers upon patients whose attention I engaged in an opposite direction."

With respect to the medical application of animal magnetism, M. de Jussieu gives the following instances of its curative effects: "Suppressed perspiration may be restored by magnetic contact. I met with a proof of this in the country, in the case of a female servant; who, in consequence of interrupted perspiration, suffered for two days with severe pain along the thigh. This woman knew nothing of animal magnetism, with which I was then very little acquainted myself. I thought it, however, a very fair opportunity for making trial of its virtues. While I was listening to the prolonged recital of her complaint, I applied one finger to the stomach, and another to the painful part. Heat returned immediately, and was followed by a general moisture, which made the pain disappear almost entirely. The patient, surprised at the effect, was able to walk at the end of half an hour, with the assistance of a stick, although previously she had not been able to stir. Two hours afterwards the move-

ment of the finger from head to foot over the bed-cover, was sufficient to excite an abundant perspiration, which lasted all night. She was completely cured in two days, by this treatment alone.

"Among the patients submitted, with some degree of success, to the magnetic treatment, several might be mentioned with affections of the eyes. Two opacities which covered the eyes of a female for five years, were so thick that the iris could not be seen. No sensible effect was produced by the magnetic treatment for three weeks; but, at the end of that time, she became subject all at once to very frequent *crises*. They commenced with a fit of convulsive and involuntary laughter; to which succeeded a rigor, and a faintness, of short duration. Simple contact in the region of the stomach, or even an approach to that part, was sufficient to excite the convulsion. If the finger or the iron rod was directed towards her at a still greater distance, a feeling of uneasiness only was produced. The spots began to become thinner, and the iris to be seen; and the patient could distinguish colours and subjects placed at three inches distance.

"The magnetic treatment has cured several quartan agues; or, at any rate, they have ceased without the employment of any other remedy. It has procured abundant expectoration in *humid* asthma; and sometimes has prevented the paroxysm in *dry* asthma. In phthisis pulmonalis, it has always appeared more hurtful than advantageous. Its action upon scrofulous humours was scarcely perceptible. It *relieved* a dropsical female, by procuring some evacuations, but did not *cure* her. Enlargement of the abdomen in another patient varied very much, and at the end of three months, there was not much diminution. Encysted dropsy, in a third, obstinately resisted all the methods employed; and paracentesis, which had become necessary, gave issue to fourteen pints of water. In spite of the continuance of animal magnetism, the swelling reappeared in a month. It gave better hopes in some cases of palsy of the extremities not of long standing; but I cannot give my attestation to any complete cure.

"The effort made by a washerwoman in lifting a tub excited a severe pain in the arm, and especially the wrist. The application of a poultice transferred the pain to the shoulder, which became swollen without redness. She could not move her elbow; and the motion of the fingers, and especially of the hand, was a little obstructed. The shoulder was so full of pain that it could not bear the slightest touch. The weight of the clothes hurt it. The patient had tried various remedies during a whole twelvemonth without success. She could not sleep. She then submitted to magnetic treatment; and, from the first days of its employment, the pains became less severe, and she obtained some sleep. The finger drawn along the arm, or fixed over the shoulder, produced an abundant perspiration in those parts. The pain diminished much, and changed its place repeatedly. It sometimes returned when the weather changed; but again disappeared. Motion returned insensibly. The patient regained the power of using the different articulations, one by one, and of carrying her hand to the head. Such is the state of the case when I last saw it.

"A man subject to violent fits of coughing, which often terminated by vomiting of blood and mucus, had a very long paroxysm, which was interrupted before its conclusion by an accident, which brought back the convulsive efforts which had ceased, and suppressed all expectoration. The eight following days passed with uneasiness and anxiety, were unavailingly employed in endeavouring to procure the return of the crisis. They produced only convulsions, and increased the feeling of oppression. At the end of that time, he was touched in my presence by M. Deslon, who, in half an hour, brought on a cough without convulsions, accompanied by abundant vomiting, and followed by an evacuation of the bowels, and the appearance of better health."

With respect to the connection between animal magnetism and electricity, Dr. Vuger remarks, "I have observed that the magnetic matter is almost always identical with the electric fluid; and that it is propogated like the latter, through intermediate bodies. Steel is not the only body which is capable of becoming magnetic; for I have imparted magnetism to paper, bread, milk, leather, silk, stones, glass, water, different metals, wood, men, dogs, and in fact to every thing I touched. I have filled flasks with magnetic matter, in the same way as is practised with the electric fluid."

The effect of imitation is seen in the following case. "A lady of my acquaintance," says Dr. Bertrand, "who by magnetism had thrown a great number of patients into a state of somnambulism,

made them feel a sensation of *coldness*, even when she held her *warmed* hand at some distance from their bodies. The *first patient* magnetised by this lady, had experienced a feeling of coldness, and had declared that the magnetic fluid was cold, and nothing else was necessary to make all the other patients likewise feel an impression of coldness from the magnetic fluid, sometimes amounting to freezing." As to the alleged odour of the fluid, it was found to be owing to cutaneous transpiration, together with the odour of the iron heated by the hand.

"A poor woman," says M. Bourdois de la Mothe, "was attacked by a well marked malignant fever. She steadily refused every remedy; demanding only that a vessel of water should be kept constantly by her side. She remained quietly all day on the straw, which served her as a bed; drinking water all day, and doing nothing else. The disease developed itself; passed successfully through its different stages; and terminated in a complete cure. Mademoiselle G. had two enlarged glands in her right breast, which gave her much uneasiness. Before commencing the use of remedies, M. Bouvart recommended amusement. A fortnight afterwards she was seized at the opera with a violent cough, and so abundant an expectoration, that she was obliged to return home; and, in the space of four hours, spat up about three pints of glairy fluid. An hour afterwards, M. Sallin examined the breast, and did not find in it any vestige of the enlarged glands." Had animal magnetism been resorted to in these cases, it would have obtained the credit of the cure.

The commissioners tried the effect of magnetism on seven poor persons; of whom four, whose maladies were asthma, swelling of the thigh, scrofula, and St. Vitus's dance, experienced no effects whatever. Of the rest, "A woman, named Charpentier, who had been thrown to the ground against a beam, two years previously, had remained in a bad state of health ever since. At one time she lost her sight; but partially recovered it. She stated herself to be the subject of double hernia; and the abdomen was so tender that she could not bear any pressure. This patient was magnetised like the others by the application of the fingers; the pressure of which gave great pain. On directing the finger towards the hernia, she complained of pain in the *head*; and the finger being placed before the face, she said it prevented her *breathing*. On the finger being moved repeatedly from above downward, she had convulsive motions of the head and shoulders, as if from a surprise, mingled with terror, and resembling those produced by cold water thrown on the face. She appeared to be equally affected when her eyes were shut. Another patient experienced effects of the same character, but much less marked. The seventh patient, Francis Grenet, had diseased eyes, particularly the *right*, with which he could scarcely see, and from which there was a considerable discharge. When the *left* eye was magnetised, by putting the thumb near it, and moving it about before it, for a considerable time, he felt pain in the globe of the eye, with lachrymation. When the right eye, which was most diseased, was magnitized, he felt nothing."

Patients of a better class were likewise submitted to the action of magnetism. One gentleman who had a swelling in the knee, with pain in the region of the patella, "declared that he felt nothing, except when the finger was passed before the diseased knee, when he perceived a slight warmth in the habitual seat of the pain. Madame de V., labouring under a nervous affection, was several times on the point of falling asleep, while the magnetic process was going forward. This process was continued for above an hour, and chiefly by the application of the hands; but she only felt agitation and uneasiness."

CLINICAL LECTURE,

Delivered March 28, 1837,

AT THE

NORTH LONDON HOSPITAL,

By Professor Cooper.

Fractured Rib, with Emphysema.

Surgeons commonly understand by the term emphysema, a swelling arising from the passage of the air from the lungs, or other parts connected with respiration, into the cellular tissue, all the different portions of which are continuous, and communicate freely by their areolar structure. This is known even to persons out of the profession. Thus at the Bicêtre, the prisoners used to get into the infirmary by making a slight puncture on the inside of the cheek, and then distending their mouths with air, so as to force it into the cellular tissue, and cause an enormous swelling of the face. Con-

scripts, to avoid service, play similar tricks, and often inflate the loose cellular tissue of the scrotum. But the word is sometimes employed in a more extensive sense. Thus, in mortification, there is frequently emphysema, arising from the decomposition of parts. There are also other cases, in which emphysema presents itself, unconnected with any wound of the lungs. During the space of two years and a half, that the North London Hospital has been opened for the reception of patients, numerous and diversified as the accidents brought to it have been, I believe only one instance of emphysema has fallen under our notice, and that was in a patient under my care in the early part of the present session.

James Collins, aged 40, admitted October 12. On the 11th he fell across a gas-pipe, and hurt his side. He went home, and as he was in a good deal of pain, some blood was taken from the arm by the practitioner who first visited him. He passed a restless night, being at intervals much distressed with difficulty of breathing, and pain in the side, over the seat of injury. He was brought to the hospital about two p. m. On examination, a crepitus was discovered below the left axilla, indicating fracture of one or more ribs. At the same time, it was manifest that injury of the lung had also occurred, for a considerable emphysematous swelling was apparent over the anterior surface of the chest and abdomen, down to Poupart's ligament. It occupied likewise the whole of the neck, face, and back, down to the crests of the ilia; extending at the same time down the left arm as low as the elbow, and down the right to the insertion of the deltoid. The patient complained of great difficulty of breathing, pain in the situation of the fracture, and of a troublesome cough.

Pulse 90, full and hard.

After he had been placed in bed, a broad bandage was applied round his chest, ℥x more blood were taken from him, and 5 grs. of calomel and ℈j of jalap given.

13. Had passed a bad night, breathing with great difficulty, and suffering severe pricking pain whenever he coughed. The emphysema, however, had subsided considerably: an important and most favourable change, showing that the air did not continue to escape from the rent in the lungs so freely as at first. Bowels had been twice copiously acted upon.

Pulse 84, and rather full.

Saline mixture directed to be taken every third hour, with small doses of sulphate of magnesia and tartarized antimony.

14. Has had another restless night, and been sick, probably from the medicine.

Emphysema still further reduced. No pain in the side, except when the patient coughs. Breathing easy—tongue moist—bowels open. Saline mixture discontinued.

18. Cough rather more troublesome, especially in the night.

℞. Tinct. Camph. Comp. ℥vj.
Spir. Æther. Nitrici, ℥ss.
Mist. Camph, ℥vj.
Liq. Animon. Acet. ℥ij.
Fiat. Mistura, Cochl. Majora, ii. 4tis. horis.

19. Constant pain about the fracture—cough very annoying—and some febrile disturbance.

Venæsect. ad. ℥x.

℞. Hydrag. Submur. gr. v.
H. s. et Haust. Sennæ mane sumend.

23. Great improvement. Emphysema nearly gone.

25. Pricking sensation felt on moving or coughing.

Pulse 90.

℞. Emulsionis Cetacei Oss, Vini Ipec. ℥ij.
Tinct. Camph. Comp. ℥ss.
Fiat. Mistura Cochl. Magn. ij. ter. in die.
Haust. Sennæ statim.

Nov. 8. Leeches were applied for the relief of the pain in his side.

Nov. 19. Discharged well.

Emphysema, contemplated generally, may be distinguished into two kinds, according as it may be the consequence of a wound of some of the parts, composing, or directly connected with, the organs of respiration, or according as it may proceed from other causes, especially those of a pathological character. Although some of these latter received a degree of elucidation from the researches of Laennec, and other eminent pathologists in France, they are still but imperfectly comprehended. Thus we know that the lungs themselves are subject to a species of emphysema, unconnected with any external wound, and in certain inflammatory diseases of the digestive tube, gas is sometimes found under the mucous membrane. Nay, this latter may be burst by a blow on the abdomen, and the air escape into the subserous cellular tissue, and thence all over the body; for in ruminating animals, whose food ferments, and generates a prodigious quantity of gas,

the same mischief is more common than in man. One form of emphysema then, that which is most interesting to surgeons, is the *traumatic*, which has varieties, according as it originates as a complication of wounds, *apparent* or *concealed*, of the lungs, bronchi, trachea, larynx, or other passages or cavities to which the air has access in respiration; or according as the emphysema follows ruptures of these parts produced by the air itself.

Gentleman, doubtless you understand the mechanism of respiration. You know that, in inspiration, the lungs are nearly passive, following and keeping close to the parietes of the chest, as well as to the diaphragm. Then the capacity of the thorax is augmented in every direction, and thus the rush of air into the trachea, bronchi, and air-cells of the lungs is determined. No doubt you also know equally well that, in expiration, the lungs, being compressed on every side from the circumference towards the centre, yield to the power of the expiratory muscles, and the air, which has entered into them during inspiration, is now expelled again, somewhat changed, however, by the chemical influence of the respiration on it and the blood itself.

These alternations of expansion and contraction of the chest, accompanied by corresponding variations in the capacity of the lungs, constitute in these the mechanism of respiration.

Now, supposing the sharp end of a broken rib should happen to tear or deeply wound the texture of the lungs, while there is no external wound of the muscles and integuments, an emphysematous tumour will be particularly likely to follow. This must be very intelligible if you consider that, when the chest expands, the atmospheric air will not only be drawn into the wounded lung, but also through the breach, or laceration of this organ, into the serous cavity of the pleura. Then, on expiration taking place, the air in the sac of the pleura, not being capable of re-entering the wound in the surface of the lung, which organ is already full of air, and the same air being compressed by the action of the muscles of expiration, is forced through the breach in the pleura costalis into the cellular tissue of the parietes of the chest in the vicinity of the fracture. The quantity of air which is thus thrown into the cellular tissue, becomes greater and greater by a repetition of the same actions, and at length is diffused to a very great extent, sometimes nearly over the whole body, and so as to inflate the subcutaneous cellular tissue to the thickness of six or seven inches.

But, gentlemen, the chief source of danger is not the external emphysema under the skin, but the accumulation of air, which sometimes takes place in the sac of the pleura, and even in the interlobular cellular tissue of the lungs themselves. Indeed, before the air escapes into the cellular tissue, it must first collect in the pleura. Hence, the vast oppression of breathing, the feeling of suffocation, and imperfect oxydation of the blood. However, when the common cellular tissue under the skin, and between the muscles, or in the sheaths of the vessels, and around important nerves, is enormously inflated, there can be no doubt that the pressure made by the air on the blood-vessels, nerves, trachea, &c. must in some degree contribute to aggravate the symptoms. Thus, by the pressure on veins, the return of blood must evidently be retarded, and the free passage of the air to and from the lungs more or less interrupted. The innervation and circulation generally must likewise be unfavourably interfered with. Emphysema may arise not only from an injury of the lung by a broken rib, or sternum, but from a wound occasioned by a penetrating weapon, or gunshot mischief. The risk of its occurrence will always be greater in proportion as the wound in the parietes of the chest, however produced, is narrow, and indirect, or tortuous. When more free and ample, the air enters and escapes from it in the movements of respiration, just in the same way as it passes into and out of the glottis, and at the same time, and from the same cause. I have seen many examples of emphysema from gunshot wounds, from stabs with narrow knives, and from broken ribs. Abroad I have known it follow the stab of the stiletto.

Wounds of the trachea, larynx, or bronchi, may also give rise to emphysema. Here the air *escapes directly* into the *cellular tissue*, without first getting into any intervening cavity like that of the sac of the pleura, then through the root of the lung and mediastinum into the general cellular tissue. The swelling in such cases first presents itself above its clavicles. The air escapes also only in expiration, whereas, as in wounds of the lungs, the air is first drawn out of them, and escapes into the sac of the pleura only in inspiration, whence it is afterwards expelled into the cellular tissue

on the contraction of the chest in expiration. Sometimes there is no external wound of the lungs, but the air cells and interlobular cellular texture are ruptured in violent fits of straining, coughing, &c. as in parturition, hooping cough, violent efforts to expel foreign bodies from the larynx in hysteria, and during the efforts to reduce dislocation of the shoulder, the air escapes into the interlobular cellular tissue, and, in this manner, occasion emphysema, either with or without pusunco-thorax being first produced. Thus it becomes a complication of ulceration of the lung, pleura pulmonalis, and pleura costalis, may lead to a communication between the pulmonary air cells and the interstices of the common cellular tissue.

But, an injury of any cavity to which the breath has access, may be followed by some degree of emphysema. Thus, the lachrymal canals have been burst by blowing the nose violently, and emphysema of the eyelids and upper part of the face been occasioned. Fractures, disease, necrosis, &c. of the frontal sinus, and fractures of the upper jaw-bone, implicating the nasal duct, have had the same effect. This kind of emphysema, however, never proceeds far.

The swelling, resulting from emphysema, has a tendency to spread, perhaps, with greater rapidity than any other with which we are acquainted, not even excepting that from internal suffusion of blood. It is unattended with heat, pain, fluctuation, or discolouration of the skin. It is soft, tense, and elastic, rising up or down as the pressure of the finger is removed from it. A crepetation is also perceptible in handling it, caused by the air changing its place in the interstices of the cellular tissue. If you press upon one part of the swelling, you not only feel, but see the effects of the air produced by its passage into the contiguous cellular tissue. If you strike the part briskly with your finger, a dull sound, compared to that of a wet drum, may be distinguished.

Our case exemplifies the success of the ordinary treatment, where the disease ceases to extend itself. After a day or two, the period when the wound in the lung begins to be closed with fibrine, the bleeding was practised with the view of diminishing the congestion of the lungs, and the risk of thoracic inflammation and extravasation. It was practised also for the relief of the cough. Even had there been no emphysema, and merely a broken rib, with cough, it would have been proper.

The broad roller was applied round the chest to keep the broken bone steady, and make the patient breathe by the diaphragm and abdominal muscles, leaving the intercostals quiet. This compression of the thorax with a bandage answers, when the quantity of air confined in the sac of the pleura is not above a certain quantity. In the contrary case, it cannot be endured, because it resists the escape of the air from the pleura, and thus augments the pressure on the lungs, mediastinum, and diaphragm.

Under such circumstances it should be removed, and the sac of the pleura cautiously punctured; for I believe, with Depuytren, that superficial punctures and scarifications will now be inefficient. But, remember that the occasion for puncturing the pleura will depend upon the urgency of the interruption of breathing, and that even this may partly depend upon other complications, especially extravasation of blood in the pleura.

The calomel and aperient saline medicine were administered to relieve the febrile disturbance, and to lessen the risk of thoracic inflammation; while the other medicines, the mistura cetacei with compound tincture of camphor, vinum ipecacuanhæ, and spirit of nitric æther, were given to appease the cough, which, in injuries of the ribs, and more especially in emphysema, is a source of considerable annoyance, and of injurious consequences with respect both to the fracture and diffusion of air.

Then, gentlemen, if you wish to follow up the subject of emphysema further, and view it as an interesting medical and pathological inquiry, you must study it in other forms. For instance, in that where air collects in the submucous cellular tissue of the alimentary canal from inflammation or disease; in that where, in consequence of certain pathological states, it collects under the serous covering of the lungs; or in others, where the source of the air, in the cellular tissues, is in the digestive canal itself. Lastly, the *pulmonary* vesicular *emphysema*, consisting in an enlargement of the air cells, or rather of the obliteration of many small air cells by their conversion into larger ones, would be a case deserving your attention, and one on which the celebrated Laennec has delivered valuable instruction. However, this does not strictly accord to the commonly received definition of emphysema.

ORATION

DELIVERED BEFORE THE MEMBERS

OF THE

ROYAL MEDICAL SOCIETY OF EDINBURGH,

AT THE

CELEBRATION OF THEIR CENTENARY,

February 17, 1837.

By W. B. CARPENTER,

Senior President of the Society; Member of the Royal College of Surgeons, London; and President of the Royal Physical Society, Edinburgh.

Gentlemen,—A hundred years have now elapsed since a few individuals studying medicine in the University of Edinburgh, then in the dawn of its subsequent lustre,—individuals at that time unknown to fame, distinguished only by their ardour in the pursuit of knowledge, associated themselves together for the purpose of mutual assistance and improvement in the cultivation of Medical Science. The association thus commenced was not suffered to decline, as too frequently happens in similar cases, when no longer animated by the presence and activity of its founders. Their spirit still remained, for their energetic zeal fell, like the mantle of the prophet, upon their successors; and a century of almost uninterrupted prosperity has raised the Medical Society of Edinburgh to a station of unequalled dignity and importance.

Numbering at its commencement but six obscure students, it now comprehends the *élite* of the medical profession in this country; and not only does it spread its ramifications into the most distant quarters of the globe, wherever British skill and talent have been called into requisition, but the greatest luminaries of our science in foreign schools have thought it an honour to be enrolled amongst its members. Unpossessed at its origin even of "a local habitation and a name," and deficient in the means of collecting and amassing the records of past experience, it is now incorporated by Royal authority, and master of an elegant and commodious edifice, well stored with the literary treasures of bygone ages, and the accumulating wealth of the present. Instituted for the purpose of individual improvement, it has become a mighty engine for the advancement of the science to which it is devoted; and I assert with little fear of contradiction, that it has exercised an influence on the progress of medicine during the last century, second only to that of the Academic Institution with which it is connected, and many of whose brightest ornaments have been numbered amongst its members.

It would at any time be interesting to trace the history of an association whose career has been so remarkable—to inquire into the causes of its origin—to follow the progressive stages of its growth—to investigate the nature and extent of the influence which it has exercised on the individuals composing it, as well as on medical science in general, and to examine what there is in its original plan, its subsequent constitution, and the circumstances in which it has been placed, which has contributed to maintain it in a degree of prosperity, and to an epoch in its existence of which no similar association can boast. But with how much more propriety may these topics engage our attention when this epoch is the special occasion of our assembling here; when the social festival by which we are commemorating the Centenary of the Royal Medical Society of Edinburgh has called from the active duties of their profession, or from their calm and dignified retirement, so many of its old and distinguished members, to join with their younger friends in testifying the advantages which they have derived from it, and to stimulate them to the pursuit of the same honourable and successful career; and when the beginning of a second century of its history, recalling to our minds the commencement of the first, bids us acknowledge our debt of gratitude to the founders and supporters of an institution by which we have so largely profited.

The early history of our Society is so intimately connected with that of the progress of Medical science during the same important epoch, that the relation of the one necessarily involves much detail with regard to the other; and as it is evident that the position of any branch of knowledge at a given period cannot be justly estimated unless the prominent events in its previous history are rightly understood, I shall make no apology for the introduction of a brief sketch of the more important changes in this department of philosophy previous to the commencement of the eighteenth century.

As in the infancy of society we trace the influence of personal strength and prowess in raising their possessor to the regal authority, so may we observe that intellectual superiority conferred a no less absolute domination over the minds of the ignorant and superstitious vulgar. The history of the ancient mythology records the honours of deification to have been conferred alike on the warrior and on the sage—on him who improved the arts of life, as on him who devoted himself to its prolongation. It may be surmised, that to a remnant of the same spirit, carefully fostered by the objects of its veneration, and kept up by that restriction of knowledge to a few which necessarily resulted from the want of means for its diffusion, we may attribute the blind deference to individual authority which both in religion and science retarded in so remarkable a degree the progress of mental illumination in succeeding ages. Thus it was that the taste for abstract reasoning and refined speculation which pervaded the ancient schools, was perpetuated by the influence of Aristotle in the world of general science, and by the authority of Galen in medicine, for nearly two thousand years. The decline of the ancient schools of philosophy was succeeded by that long and dreary interval in which the world was overclouded by a dismal gloom, unbroken save by the coruscations of some brilliant intellect, which glared like a meteor through the darkness of ignorance and superstition, and then vanished without leaving a trace of its existence. During the three centuries succeeding the extinction of the Saracenic school in Spain, Medicine, which had there found a temporary refuge, fell, like every other science, into the lowest state of degradation. The metaphysics of Aristotle, adapted to the existing state of civilisation and learning, and the relations subsisting between the civil and ecclesiastical powers, gave rise to the scholastic philosophy, whose domination during the middle ages was so severe and universal. The spirit of slavish deference to authority was that which characterised the age; it paralyzed the efforts of those enlightened men who sought to free the world from this moral slavery, and entwined itself with parasitical fondness round the majestic column of revealed truth. Even in the darkest periods, however, the philosophic historian may trace the glimmering of that light which burst with full splendour upon a subsequent age.* The gradual abolition of the feudal tyranny, the downfall of the Eastern empire, and the consequent revival of learning in Europe, the invention of the art of printing, which has been most justly said to "deride the havoc of time and barbarism," and the discovery of a new continent, were events of which any one would have been important it itself; whilst the conjoined effect of all was to produce a total revolution in the established modes of thinking, whether in religion, philosophy, or science.

One of the first effects of this revolution was to direct the attention of the learned to the original authorities on each of these subjects. Whilst Luther and his followers declared that the Scriptures are to be regarded as the sole guide to sacred truth, and separated their doctrines from the additions of a corrupted church, the students of philosophy and medicine had recourse to the genuine writings of Aristotle and Galen, which, after having been so long concealed in the libraries of Constantinople, were now most advantageously substituted for the imperfect and erroneous transcripts which had been employed in their stead. It required a further advance in the education of the age, before the simple astronomical doctrines of Pythagoras could supersede the cumbrous system which had usurped their place; and before the purer principles of Hippocrates, united to the spirit of careful observation which he so strongly inculcates, could be preferred to the more showy hypothetical structure erected by Galen and his followers.

It cannot but be esteemed as peculiarly fortunate that at this epoch, so important in the history of the human mind, the revolution in philosophy was conducted by two individuals possessed of intellects so exalted, of motives so disinterested, and of situations so favourable as those of Galileo and Bacon. These two great men arrived at the same result by different means, and thus strengthened and confirmed each other's exertions. The original and sagacious mind of Galileo led him to test the correctness of the received dogmas, by an appeal to experi-

* "There was always a faint twilight, like that auspicious gleam which, in a summer's night, fills up the interval between the setting and the rising sun."—*Harris's Philosophical Inquiries*, Part III. chap. i.

ment; the comprehensive learning and deep penetration of Bacon convinced him of the futility of the ancient mode of philosophising, both from the barrenness of its results, and from its inconsistency with the structure of the human mind. Whilst Galileo has perhaps the strongest claim to be considered the father of experimental philosophy, Bacon, as Dr. Thomas Brown justly remarks, was the reformer, not of physical but of mental science.* His comprehensive genius, surveying the whole panorama of nature, seized upon the highest principles of philosophical investigation, and traced out the method to be followed in bringing them to perfection; whilst his prophetic eye, foreseeing the results which were afterwards to be attained, enabled him to delineate a system of science which had not yet begun to exist.

In tracing the history of human improvement, it is most interesting to remark, the characteristics of more enlightened ages, shadowed out in the minds of men who were in advance of their time, but who were prevented by the depressing influence of the systems of error and ignorance in which it was then their lot to be placed, from rising to those exalted views which more unshackled, though perhaps not more powerful, intellects have attained. Thus in the writings of Hippocrates may be discerned a glimpse of that great and fundamental truth to which Bacon was the first to give full utterance, "that in every science, the basis of all our knowledge is the accurate observation of actual phenomena, and that the correct generalization of these phenomena should be the sole foundation of all our reasoning."†

The science of Medicine was not slow in experiencing the benefit of this general reformation. The authority of Galen had been gradually undermined by the palpable errors which the zealous pursuit of anatomical investigation displayed in his works; the preference given to Hippocrates gained a corresponding increase; and as a necessary consequence, the habit of correct observation was confirmed, and the value of the observations was more justly appreciated."* The splendid anatomical and physiological discoveries of Harvey and Asselli, combined with the philosophical basis given by Boyle to chemical research, to extend the boundaries of our science, and to purify it from its grosser errors. At this period of the history of medicine a remarkable analogy may again be traced with the corresponding era in the progress of general science. The age of theories was not yet past; though the abstract speculations of the ancient schools were rapidly giving way before the accumulation of opposing facts, the framing of hypotheses was found too pleasing an employment to be relinquished; and the philosophy of Descartes, and the chemical and mathematical theories of medicine may be regarded as having alike contributed to the overthrow of the ancient systems, and retarded the progress of true science. The former was destined speedily to yield to the gigantic intellect of Newton; the latter contested their places with other theories of a similar tendency, until the Newtons of physiology and medicine appeared in the persons of Haller and Cullen. It was reserved for them to complete the triumph of the inductive philosophy, by demonstrating the practicability of its application to the sciences which were regarded as beyond its pale, and to establish, on a sure basis, the true method of advancing their progress.

You may perhaps consider, Gentlemen, that I have wandered far from my original topic in presenting you with this historical retrospect; but my object has been not so much to sketch the progress of medicine as a science, as to trace the successive changes in the mode of pursuing it, in which this Society had afterwards so important a share, and which afford us an insight into that deeply interesting branch of inquiry which I might denominate the self-education of the human race.

In the revolutions of science, as in those of religion, or of our political institutions, much is frequently due to the

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* "We must not forget," says this profound metaphysician, and eloquent writer, "that the temple which Bacon purified, was not the temple of external nature, but the temple of the mind; that in *its* innermost sanctuaries were all the idols which he overthrew; and that it was not till these were removed, and the intellect prepared for the presence of a nobler divinity, that Truth would deign to unveil herself to adoration;—as in the mysteries of the Eastern religions, in which the first ceremony for admission to the worship of the god, is the purification of the worshipper." —*Brown's Lectures*, vol. i. p. 28.

† Bostock's History of Medicine, p. ix.

* Bostock's History of Medicine, p. xlvii.

commanding influence of a single intellect, or perhaps more commonly to the union of a few men of congenial views, and corresponding objects. But that their labours may not be fruitless, there must have previously existed a certain preparation in the public mind, without which their exertions can be but little effectual towards their designed end.

This, it appears to me, is the explanation at once of the origin and early success of the Medical Society. The hour and the men were both come. Living at a period of remarkable mental excitement, when the splendid discoveries of the seventeenth century, and more especially the spread of the Newtonian philosophy, were giving a stimulus to the investigation of truth in every department of science, and when the medical world was the arena of fierce controversy between opposing sects, its judicious founders adopted the principles of the inductive philosophy; and determining to consider nothing as proved until submitted to the test of experience, they candidly examined the doctrines of their teachers, and formed their own opinions as to their validity.

And, Gentlemen, it is to be recollected that however evident the accordance of such a proceeding with the principles of sound philosophy, or even with the dictates of common sense, may appear to us at present, it must have been regarded at the time as a daring innovation. The period of which we are speaking still exhibits the remains of that subservience to authority which characterised the dark ages of science. The names of Boerhaave, and Stahl, and Hoffman, were substituted by their respective followers for those of Galen and Hippocrates; the same blind reception of their dicta, the same submissive obedience to their injunctions prevailed in the schools over which they presided, as in those of ancient Greece; and their pupils thought themselves as much bound to maintain and propagate the opinions of their preceptors, as did those of Aristotle and Pythagoras of old. Though the objects of idolatry were changed, the temple and the worship still existed, and adoration was still paid by their blinded votaries.

I need scarcely remind you, that at the period of the formation of our Society, the Medical School of Edinburgh was rapidly advancing towards the proud eminence which it afterwards occupied. It was only about ten years previously that a regular Faculty of Medicine had been established; and to the talents and industry of the illustrious men who were then introduced into the University, may be traced much of its subsequent renown. Its energies were cramped, however, by that spirit of system which still universally prevailed in Medical Science, and which was not long before so predominant in every school of philosophy, that Bacon lamented it as an evil inseparable from Universities. All the Professors who took an active part in the duties of instruction, had studied under the illustrious Boerhaave, whose doctrines then maintained their highest celebrity; and in the school of Edinburgh, formed upon the model, and succeeding to the eminence of that of Leyden, his principles continued for more than forty years to hold unlimited sway. The honour of the introduction of more correct views, and the final overthrow in this country of the hypothetical systems of former times, is due to the Medical Society, whose origin it is time that I should now detail.

The deficiency of any authentic records of its early transactions is fortunately supplied in part by the recollections of its oldest members; and in the writings of Dr. Fothergill, we find the following elegant account of its commencement. "Several students, at that time, the foremost in application and in knowledge, fired by the example of their masters, who had nothing more at heart than the improvement of those who committed themselves to their tuition, formed themselves into a Society for their mutual instruction, and advancement in their studies. Every student of a certain standing who distinguished himself by his diligence, capacity, and conduct, was initiated into this little assembly. Here the opinions of the ancients, of their contemporaries, nay, the doctrines of their masters, were freely discussed; and two of the members were always charged with the task of providing instruction and entertainment for the next meeting of the Society. Questions, no doubt, were here disputed and decided, which long experience would have declined; but it exercised their faculties, gave them both sides of arguments, taught them to doubt, and habituated them to observation." A more minute and circumstantial account, which it is not necessary here to quote, is given by Dr. Lettsom in his Memoir of Dr. Fothergill; his information was probably derived from one of the original founders of the Society, who has recorded the names of his coadjutors.

You will naturally inquire, Gentlemen, who were the individuals whose enlightened spirit shed such lustre over the humble sphere of their exertions; did the flame of intellectual zeal maintain a steady radiance during their subsequent career; or was this a transient effort of youthful enthusiasm, whose glow was speedily extinguished by the very energy of its combustion. Of the six founders of our Society, three, at least, rose to eminence in after life. Dr. Cleghorn is honourably distinguished by his work on the diseases of Minorca (which owes its origin to the suggestion of his friend Fothergill), and subsequently to its publication he was appointed Professor of Anatomy in the University of Dublin. Of Dr. Russel, we have also a literary memorial in the Natural History of Aleppo, a work which was long regarded as a model for similar compositions. It is not a little remarkable that, at a subsequent period of his life, when engaged in practice in the English metropolis, he was mainly instrumental in the establishment of the London Medical Society. In this undertaking he was assisted by many who remembered the benefits which they had derived from that of Edinburgh; and the oldest institution of its kind in England may thus be considered the legitimate offspring of that whose nativity we are now commemorating. If further testimony were wanting to the merits of Dr. Russel, it is afforded by the beautiful tribute of the accomplished Fothergill. "For my own part," he says, "when I recollect what I have lost in him, the sensible, firm, and upright friend—the able, honest, and experienced physician—the pleasing, instructive companion of a social hour—expression fails me." It may be regretted that Dr. Cuming has left us no literary record of his eminence; but it is enough to know that he not only attained great local reputation as a practitioner, but that he remained during life the beloved friend of Fothergill. Of the three remaining founders of this Society, Dr. Hamilton, Dr. James Kennedy, and Mr. Archibald Taylor, history has transmitted us no information; it may, however, be inferred, from an expression of Dr. Fothergill's, that they were cut off in the midst of their usefulness by premature death.—But, Gentlemen, as long as this Society shall exist, their names shall not pass away unhonoured and unknown; for of them may it be said in the language of the noblest epitaph ever written, "*Si quæris monumentum—circumspice.*"

It was in the year 1734 that the Association was formed, which may be regarded as having originated the Medical Society; but it was not permanently constituted until three years afterwards, at which date the list of members commences, which is the earliest of our documents still existing. In this interval, the infant Society, then struggling for existence, was strengthened by the junction of two individuals, of whom each contributed much to its subsequent eminence, and one exercised a most important influence on its destiny. I have mentioned that of the founders of this institution, three at least enjoyed through life the esteem and friendship of the illustrious Fothergill; and it is interesting, therefore, to believe that this tie was formed by their companionship in an undertaking so important and so difficult. We cannot hesitate in the conviction, that to the "singular combination of vigorous power of mind, and chaste integrity of manners," which obtained for him so high a subsequent eminence, this Society is largely indebted for its early usefulness and reputation. To Dr. Fothergill and his friend Cleghorn, we probably owe its continuance, when the dispersion of the original members threatened its downfall.

To Dr. Cullen, the early obligations of the Society are probably not inferior. It appears from one of his letters which is still extant, that he did not neglect to avail himself of the advantages which it presented even in the first year of its existence; and though no record of its transactions has come down to us, we can scarcely doubt that he there exhibited the independent and inquiring spirit, which, under the guidance of unwearied industry and insatiable desire of distinction, afterwards raised him to the loftiest eminence among the benefactors of our science. And while we believe that here the "burning and shining light" of his powerful genius unveiled its dawning lustre, and that the glow of enthusiasm which he here displayed in the pursuit of knowledge must have kindled a corresponding ardour in the breasts of his associates, are we not also justified in supposing, that the mental illumination thus diffused, was reflected back with augmented brilliancy upon himself, and that here his intellectual progress was cheered and supported in its advancement towards the glorious splendour of "perfect day."

(To be continued.)

COMPLETE MEMOIR ON

PHTHISIS LARYNGEA,

EXTRACTED FROM THE UNEDITED WORK OF MESSRS. TROUSSEAU AND BELLOC, FOR WHICH A PRIZE WAS AWARDED BY THE ACADEMY OF MEDICINE IN PARIS.

What is meant by Phthisis Laringea? What are its Organic Alterations? its Causes? its Species? its Termination? What is its Treatment?

CHAPTER IV.

(Continued from p. 28, No. 1.)

SYMPTOMS.

General symptoms are seldom seen in Phthisis Laryngea, unless the disease be at the acute state, or when anatomical disorders have attained great development. When the disease becomes chronic the local symptoms are alone perceptible, and to these symptoms the practitioner must give his whole attention.

Alteration of the sound of the voice. In the first stage the voice becomes weak and hoarse. This hoarseness is greater in the evening than in the morning, and increases when the patient goes from a warm to a cold situation; and *particularly* from a cold to a warm room.

This hoarseness is more intense if the patient be hungry; and in women it also increases at the period of menstruation. The abuse, or sometimes the simple use of coitus, produces the same effect.

The hoarseness is intermittent in the first stage of the disease, but it soon becomes habitual, and continues so till the termination of the malady.

Aphonia. Aphonia is generally a serious symptom, often arising from a deep alteration of the larynx. We are, of course, understood to mean continual aphonia, for a simple catarrhal swelling of the mucous membrane may often occasion a total loss of voice. Aphonia, like hoarseness, is greater in the evening than in the morning; when this modification exists, there is reason to suppose that the disorders are not yet of a serious nature.

Inequality of the voice.—The voice, though sometimes merely hoarse, is generally equal in conversation; but when the patients lay a stress on certain syllables, the voice becomes shrill and squeaking.

Cough.—Coughing is usually more frequent in Phthisis Laryngea than in diseases of the chest. Its sound is always similar to that of the voice, therefore it is hoarse when the patient is hoarse, and weak when aphonia exists.

Expectoration. — Expectoration is mostly mucous, transparent and tenacious, more or less abundant according to circumstances; sometimes clotty, puriform yellow, streaked with blood. These clots are expectorated by a slight effort, unconnected with cough. This symptom shews that there is ulceration in some parts of the larynx.

Pain.—Most patients suffer but little pain; it sometimes happens that it is less at the end than at the beginning of the disease.

Swallowing causes more pain than speaking or breathing, which leads the patient to believe that lesion exists in the pharynx, not in the larynx. But it is easy to account for this phenomenon, as the pharynx completes the front part of the larynx, and the same mucous membrane covers the whole.

Symptoms ascertained by sight.—Sight affords but little assistance in the discovery of disorder existing in the larynx, nevertheless the careful examination of the throat should on no account be neglected. The disease often commences in the pharynx or its appendages, and it is right to see whether these alterations present any special characteristic. This remark is important, especially as regards Phthisis Laryngea Syphilitica. The epiglottis may sometimes be seen, though this is seldom the case. We have only met with two patients in which it was perceptible. The shape of the alteration of the epiglottis may lead to a supposition of the nature of the alteration of the larynx; an attempt to discover it should therefore always be made. The handle of a spoon should be bent, placed on the tongue, and drawn forward; then if the patient screams, the fibro cartilage is perceived: it is elevated while the shriek lasts, and then falls.

Symptoms ascertained by the touch.—Some authors consider crepitation as a pathognomonic symptom of a serious alteration of the cartilages of the larynx. We do not attach the same importance to this cresignation. It exists among certain individuals who have a healthy larynx, if the organ be moved: it then depends on the cartilages rubbing against the cervical vertebræ. This symptom must therefore be looked on with the greatest circumspection.

It is extremely difficult for the finger to reach the inside of the throat, as its introduction causes vomitting. Yet, by

means of the finger, serious alterations of the epiglottis and the superior orifices of the larynx are sometimes ascertained.

Signs furnished by respiration.—In the first period respiration is scarcely affected, but, as the disease increases, *anhelation* or *panting* comes on, and continues till death, unless the course of the disease be arrested. This panting may depend on two causes:

1st. The patient may be already weakened by disease, then panting is caused by the diminution of muscular strength.

2nd. This oppression may be caused by the orifice of the lungs becoming small, in which case the patient, in the first instance, suffers from an attack of asthma; then all fits generally begin in the night, respiration is easier in the day.

Later on the fits increase, if the oppression is lasting, the patient requires to be propped up with pillows in bed; breathing then has a wheezing sound, and the noisy respiration is prolonged.

Real paroxysms of orthopnea then arise, during which the anxiety is extreme, and suffocation imminent. In the course of fifteen or twenty days after this period the patient generally falls a victim to suffocation.

Deglutition.—The mode of deglutition does not appear to require any great consideration as regards the form and extent of the lungs and its appendages. We have given several cases which prove that, in certain patients, the epiglottis being perfect, food nevertheless, falls into the larynx, or returns through the nostrils; while in others, when the epiglottis is destroyed, or nearly so, deglutition takes place without difficulty.

Different spmptoms according to the species of phthisis laryngea.

Phthisis laryngea syphilitica.—Phthisis laryngea syphilitica has frequently symptoms, the knowledge of which may be essentially useful; for instance, the alteration of the larynx is an extension of the disease already found in the canals; and in this species of disease deglutition is generally more painful than in any other. The touch is of greater service here than in simple phthisis laryngea.

We have given the case of a patient, in whom we have discovered the existence of enormous vegetations on the pharynx, and even on the superior part of the larynx. This latter observation is applicable to the cancerous phthisis laryngea, but if the seat of the evil be exclusively in the larynx, and beyond the reach of the finger, the previous state of the patient and other concomitant lesions must then throw some light on the nature of the alteration. Such then, whatever may be the state of the patient, is the best mode of investigation; but when possible, the practitioner should insist on the touch.

Tuberculous Phthisis Laryngea.—Phthisis laryngea appears to us of a tuberculous nature whenever it exists with confirmed pulmonary phthisis, therefore, the symptoms of this latter affection can alone throw a light on the diagnosis.

Cancerous Phthisis Laryngea.—We should be inclined to think that this species of disease might be recognized by the touch. If a tumour be felt in the larynx, and symptoms of cancerous affections exist at the same time, there could then be no doubt as to the nature of the disease, but these signs seldom exist simultaneously. In the case of cancerous phthisis laryngea we have given, the patient felt no lancinating pains, and that yellow complexion, generally considered as a characteristic of cancer, did not exist, an exterior tumour was manifest before we were able to decide on the nature of the case.

CHAPTER V.

TERMINATION.

1st. We have examined in this chapter how phthisis laryngea can engender pulmonary phthisis, and again how pulmonary phthisis can give rise to phthisis laryngea: we have given our opinion on the connexion between phthisis laryngea and the swelling of the mucous membrane, improperly called œdema of the glottis, and we have said a few words respecting its cure. We find, on examination, in persons dying of pulmonary phthisis, that consumption is owing to other disorders besides those existing in the lungs. Thus the cough that fatigues all the muscles, fever, perspirations, diarrhea, are more immediately fatal than pulmonary lesion itself.

We therefore conclude, that the death of a patient cannot be attributed to phthisis laryngea, if the lesion of the larynx exist alone, but it must be proved that it existed in the first instance, and gave rise to all the ensuing accidents.

We have given several remarkable cases of simple phthisis laryngea, among which is one related by Portal; death often takes place before the ulceration of the larynx has caused real consumption. The difficulty of breathing, sometimes

the impossibility of deglutition, the violence of the cough, suffice to cause a fatal termination before the patient reaches a state of marasm. As to the tuberculous phthisis laryngea, the cases we have related, give rise to the following reflections:

1st. Tuberculous pulmonary phthisis generally shews itself first, and the larynx only becomes affected in the last stages.

2nd. In some peculiar cases, the tuberculous lesion commences with the larynx, and invades the lungs at a later period, this, however, very seldom occurs.

3rd. Sometimes the phthisis laryngea and the pulmonary phthisis arise and increase conjointly.

4th. In this latter case, the lesion appears sometimes to exist exclusively in the larynx, on account of the predominance of the symptoms of the larynx, and the difficulty of ascertaining the lesion of the lungs by stethoscopic signs.

One of the most fatal results of the phthisis laryngea is the swelling of the borders of the glottis; we have devoted a whole paragraph to shew the relation existing between the disease that authors have called aninga laryngea œdematosa, and phthisis laryngea.

Connexion of angina laryngea œdematosa with phthisis laryngea.—Our limits will not permit us to enter into a discussion on this important point of pathology, we shall, therefore, merely give a slight sketch of the conclusions resulting from this discussion.

Boyle very justly divided the angina laryngea œdematoso into primitive and consecutive.

When primitive, it is almost constantly the result of an inflammatory fluxion of the larynx, or of the neighbouring parts, and is precisely of the same nature as those described by Boerhaave.—Aph. 801—802.

When it is consecutive, that is to say, caused by an organic lesion of the larynx, or its appendages, it may be inflamed or active, or not inflamed or passive.

In the first instance, the inflammation has extended from the affected part to the mucous membrane of the larynx.

In the second, the serosity accumulated under this membrane is only owing to the congestion of liquid tumefaction round the loss of substance.

In both cases the angina laryngea œdematosa, having as an origin an ulcerated spot, cannot be considered as independent of inflammation.

Whatever be the cause of phthisis laryngea, it may justly be considered as the most frequent *occasion* of angina laryngea, œdematosa.

Termination by cure.—The chance of saving the patient must depend on the attention given in the early stage of the disease. If the affection has made progress, and arrived at a state of marasm, there can be but little hope.

In our chapter on the treatment, there are, however, several cases in which active medicine has prevented accidents, and restored health to patients who were in imminent danger. Morgagni, (epist. 44, art. 55,) gives a remarkable example of the cure of an old man labouring under syphilis, which had brought on great alterations in the larynx.

From these considerations we may conclude, that, if when the alteration of the larynx has reached a certain pitch, there is but little chance of saving the patient, yet all hope of success must not be abandoned.

CHAPTER VI.

TREATMENT.

Repose of the Organ.—Repose of the organ is one of the most important conditions to which the patient must submit; however, Messrs. Trousseau and Belloc have given several cases which serve to prove, that cures have been obtained without this condition meeting with rigorous attention.

Antiflogistics.—Bleeding has, in our opinion, been found the most efficacious treatment at the commencement of phthisis laryngea, we prefer bleeding in the arm; if leeches be applied to the part affected, they must be very numerous.

If there be reason to suppose that the affections of the larynx is owing to a suppression of the menses, leeches must be applied to the thighs, or to the vulva; if to a suppression of hemorrhoids they must be applied to the anus.

Emollient applications on the larynx seem to do more harm than good, owing to the quantity of blood they draw to the part affected.

Revulsives.—Revulsives are generally found much more efficacious than bleeding, when the disease is of long duration.

Thus, advantage may be derived from the application of blisters, but they must suppurate a long while; they must be put on the nucha, particularly for men, who, on account of their thick beards, would be too much inconvenienced by having them on the fore part of the neck.

Setons and potential cauteries applied to the front of the neck are sometimes found very beneficial.

Revulsives applied at a distance from the affected part have never appeared to us very efficacious.

Narcotics.—Narcotics are useful to relieve pains and cough. Extract of datura stramonium and belladonna rubbed on the interior part of the neck, salts of morphia inrtoduced by the endermic method, merit the preference.

Topical Medication.—The fumigations used in diseases of the larynx are either the vapour of pure water, or mucilaginous, or balsamic, or aromatic; the dry fumigations are the smoke of pitch, resin, snuff, hyoscyamus, cinnabar, sulphuric acid, &c. &c. &c.; but we have given up all these remedies, for they reach the lungs.

Topical Liquids.—The topical liquids we most frequently apply, are the solution of nitrate of silver, sublimate, sulphate of copper, or nitrate acid of mercury. We prefer nitrate of silver, from the use of which we have never met with any serious accident. The solution of sublimate, employed according to Mr. Malapert's method, in the proportion of one to eight grains of distilled water, has proved successful in some cases of syphilitic ulcerations, which we have related in our work.

To convey these liquids on the throat topically, we take a fine round sponge, six or eight lines in diameter, fastened to a bit of whalebone, forming at one end an obtuse angle of about ninety-five degrees.

By means of this small instrument, we can reach both sides of the epiglottis, the pharynx, and the upper part of the larynx.

We also adopt the following plan:—

We have had fitted to a small silver syringe, like Anel's, a canula, five inches long, and bent at the end; we fill the syringe $\frac{3}{4}$ air and $\frac{1}{4}$ solution of nitrate of silver, then the canula being introduced into the fauces opposite the larynx, we push the piston quickly, and the liquid, mixed with the air in the syringe, falls on the upper part of the larynx and the œsophagus.

The patient immediately has a fit of coughing, which should cause no alarm; he should directly take a gargle of hydrochloric lemonade, or salt water, which decomposes the solution of nitrate of silver that is not combined to the tissues.

The numerous and very interesting cases related in our memoir prove the efficacy of this energetic remedy.

Pulverulent remedies.—In insufflations into the larynx, we frequently have recourse to pulverulent remedies of different nature; among which we shall mention, in an inverse order to their energy, subnitrate of bismuth, that may be employed pure; alum, acetate of lead, sulphate of zinc and copper.

Calomel and red precipitate have furnished very striking results in cases of syphilitic and other ulcerations of the mucous membrane of the larynx. These powders, excepting subnitrate of bismuth, may be mixed with powdered sugar candy, in various proportions, suited to the activity of the remedies employed.

The *insufflations* of mercurial powder must not be repeated more than two or three times a week in the first instance. Without this precaution the injury might be increased.

General Mercurial Medication.—We have collected and annexed to our memoir a great number of cases taken in our own practice, and in that of others. These cases are highly interesting, and most decidedly prove the advantage of mercurial treatment carried even to salivation in desperate cases of phthisis laryngea. We cannot, therefore, too strongly recommend this medication for serious diseases of the larynx, whether syphilitic or not.

Tracheotomy.—Notwithstanding the ability with which the treatment may have been directed, accidents may increase, and the patient's life be endangered by the air not reaching the lungs. In this case, tracheotomy must be had recourse to, it offers a fair chance of success, and could not be neglected without a failure of duty, whatever may be the opinions of some practitioners, influenced, no doubt, by the opinions of the ancients.

We have given many instances in which the life of the patient had been saved by opening the trachea; at all events, as this operation is never performed unless there is imminent danger of suffocation, a canula should be introduced into the aperture of the trachea, and this canula should be of sufficent dimensions to permit the free passage of the air to the lungs. The physician, then, having no fear of his patient being suffocated, can employ the necessary medication for the lesion of the larynx. When the larynx can perform its functions, the canula may be withdrawn, and

the wound soon heals. But if the affection has been so serious as to leave no hope that the air can ever go through the natural passage, the canula may be left in the upper part of the trachea. We have given an example of a patient who wore a silver canula ten years.

It might happen that after the operation was happily terminated, and the canula introduced, the disease was in its nature incurable. It then progresses till death becomes inevitable. Several cases of tuberculous phthisis laryngea and cancerous phthisis laryngea are of this kind; but even then the operation is well-judged. as it evidently prolongs the life of the patient.—*The Continental and British Medical Review.*

AN ESSAY

ON THE ORIGIN AND NATURE OF

TUBERCULOUS

AND

CANCEROUS DISEASES.

(Continued from p. 11, No. 1.)

READ TO THE MEDICAL SECTION OF THE BRITISH ASSOCIATION, ON THE 23RD OF AUGUST, 1836, BY RICHARD CARMICHAEL, M. R. I. A., CORRESPONDING MEMBER OF THE ROYAL ACADEMY OF MEDICINE OF FRANCE, ETC. ETC., AND CONSULTING SURGEON OF THE RICHMOND SURGICAL HOSPITAL, ETC. ETC.

Some modern pathologists have been at great pains to determine the nature of tuberculous formations by the shape and form in which they present themselves; but they might as well attempt to form just conceptions of the nature of those fungi which grow on the decaying surfaces of timber in damp wine vaults, or on the mouldering bark of the more ancient oaks and other forest trees, by a consideration of the shapes they assume, which vary according to the situations in which they happen to arise, as they are moulded and turned from their natural course by every barrier that happens to come into contact with them during their growth. An examination into their internal structure, on which the aid of the microscope may afford much light, is more likely to lead to an accurate knowledge of their true nature.

A consideration of the elementary principles of vegetables, carbon, oxygen, and hydrogen, when compared with those of animals which are the same, with the addition of azot,* should induce us *a priori* to suppose that animal matter, whenever the vital principle is weakened or nearly extinguished, is more prone to fermentable changes, and consequently to the production of parasitic beings than vegetables, which arise in both kingdoms whenever a diminution of vitality loosens the bonds which tie together the component organic particles of which they are composed, and permits them to assume new shapes of existence. It is thus that the simplest forms of organic life are to be met with, as parasitic plants in the vegetable, and the entozoa in the animal kingdom, where every circumstance seems prepared and favourable for their production. The mischievous effects of parasitic plants in the vegetable world has long engaged the attention of the botanist and agriculturalist; and to those of the animal kingdom, which are still more general and destructive, I urgently call the attention of the profession and the public.

The analogous disposition to the production of parasites in both vegetables and animals has been long apparent to me, perhaps chiefly in consequence of the the vast number of malignant cases, which during a long course of public and private practice have come under my observation. The most remarkable instance amongst them which excited my attention to this analogy was that of an old gentleman, whom I saw many years since, in consultation with Mr. Macklin. There were few parts of his body to be seen that did not betray the growth of cancerous formations. The forehead, nose, prominent parts of his cheeks, lower lip, breasts, testes, &c. &c. exhibited the schirrous, cartilaginous, or horny masses which cancer universally exhibits; and such was the general prevalence of the disease that I could not avoid remarking to Mr. Macklin, at the time, that this old man strongly reminded me of an ancient oak overspread and exhausted by fungi.

Carcinoma is in general a disease of the middle or advanced periods of life; but in some the predisposition is so strong that it may occur even before the age of puberty. Some years ago I examined, in conjunction with Mr. Peile, the body of a young woman twenty-one

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* I do not here notice other primary principles which enter into the composition of living beings, such as sulphur, phosphorus, iron, lime, magnesia, soda, &c. &c.

years of age, who died of cancer of the womb; and I lately had an opportunity of observing extensive carcinomatous accretions in a girl of fourteen, whom I attended for nearly a year on account of a variety of complaints which evinced disease of nearly all the viscera of the different cavities. In making a post mortem examination, in which I was assisted by my friend and former pupil, Mr. Belton, we found tubercles or carcinomatous tumours in all the cavities. In the anterior lobes of the brain there were encysted fungous tumours about the size of wall-nuts. There was a large mass of a semi-cartilaginous substance in the anterior mediastinum. The lungs were tuberculated. Both mammæ were enlarged, and presented the usual cartilaginous appearance of carcinoma, and the mesenteric glands were also in a tuberculated state.

I might adduce numerous other instances of carcinoma occurring at an early period of life, but the above are sufficient examples. In these two persons, who thus died its early victims, the countenance had the remarkable pale hue, with a tendency to lividness, called a leaden colour, to which I have before alluded.

It is to be remarked that Andral has made very similar observations respecting the colour of the skin in those predisposed to tubercular phthisis; he says, "observation has proved, that it (tubercle) has an especial tendency to grow in those individuals whose skin is very fair, and as it were *blanched and without any trace ofcolouring matter* in its capillaries. The colouring matter thus deficient in their skin is likewise so in their eyes, which retain the blue tint of infancy, and in their hair, which is light coloured, and also small in quantity. Their muscles are soft and slender, and show little contractile power; their blood is serous, and deficient in fibrine and *colouring matter*."

In chapter viii. of the second edition of my work upon Cancer, published in 1809, I have particularly noticed this peculiar character and colour of the countenance of those disposed to carcinoma and tubercular phthisis, and ascribed it to want of colouring matter in the blood. I have also in the same chapter related some post mortem examinations of those who died of external cancer, having at the same time tubercles in the lungs, and that on comparing the structure of one with the other (the cancerous mass with the tubercles) little or no perceptible difference was apparent. These facts, coupled with the various circumstances and analogical reasonings stated in this paper, afford, to say the least, a strong presumption, that pulmonary tubercles are more nearly allied to carcinoma than to scrofula.

One remarkable circumstance attending the transmutations of pulmonary tubercle and hydatids is, that in the last change of both one and the other the same identical appearances are presented. Thus in both we find a matter of a cheesy or putty-like appearance, with calcareous matter. I have already given sufficient proof that such is the last transmutation of hydatids; now I shall adduce one or two esteemed authorities, that tubercles in the lungs and elsewhere have a similar termination.

Carswell, speaking of the last transmutation of tubercles, at that period at which he infers that the disease had undergone a natural cure, says, "the tuberculous matter, whether contained in a bronchial tube, the air cells, or cellular tissue of the lungs, assumes a dry *putty-looking, chalky*, or *cretaceous* character;" and he has beautifully illustrated this fact in Plate iv. Fig. 4, of his Pathological Anatomy.

Monsieur Regnaud, in his accurate memoir on the Obliteration of the Bronchi, inserted in the Memoirs of the Royal Academy of Medicine, enumerates tubercles as one of the most influential causes. "In phthisical patients," he remarks, "it is not uncommon to meet in different points of the lung, particularly near the top of it, encysted or free masses, resembling tubercle, soft plaister, or dry chalk, varying from the bulk of a pea to that of walnut. These chalky masses, or those resembling dried tubercles, are contained in pouches more or less thick. The contents of these pouches are different: sometimes they are like tuberculous matter, oftentimes it is like wet plaister, at other times so dry as to crumble between the fingers; again it is found like chalk, resisting the edge of the scalpel, and it is not unusual to find small portions of a matter as hard as silex in their centre."

Andral observes, "we sometimes find tubercle acquires an unusual hardness and becomes transformed into a gritty mass, in which chemical analysis shows a notable quantity of phosphate and carbonate of lime; these salts are also found, but in much less quantity in ordinary tubercles, so that their cretaceous trans-

formation is merely a withdrawing, a re-absorption of the animal matter." He then gives the analysis, by Thenard, of tubercles in their natural state, before they had undergone any softening transmutation. He adds their analysis after they had undergone their last or cretaceous change. In both states it appears that carbonate and phosphate of lime enter largely into their composition. We may then infer that when hydatids and tubercles, like the animal which they infest, die, and undergo their last transmutation, their soft parts disappear, leaving only the earthy particles behind, which bid defiance to the process of putrefactive fermentation or absorption to remove. Now, as it does not appear from any known analysis that coaguble lymph contains phosphate and carbonate of lime, the inference is obvious that the prevailing theory respecting tubercles is wrong; and, on the contrary, as we find cretaceous matter containing both phosphate and carbonate of lime is always found in hydatids, the lowest order of entozoa at present acknowledged, a strong additional inference is afforded, that tubercle constitutes another and the last link of this class.

In the presence of those earths, even in the lowest animals, we cannot help observing something of that type upon which the Creator formed the entire animal kingdom. For as the nervous system is not, in zoophytes, or the lowest grade of animals, collected into distinct cords, but is universally diffused through their substance, so we find those earthy particles which form the basis of the skeleton of higher classes, diffused also through the system of these, the last link in the chain of animal life.

At the last meeting of the Association, my friend Doctor Houston read an interesting account of cysto-circi hydatids, found in the abdomen of an Axis deer. Bunches of soft tumours, varying from the size of a pea to that of an orange, were attached to the omentum and peritoneal folds of the different viscera. These were found to be the capsules of those hydatids. Now, although this animal's lungs were found to be filled with tubercles of which he died, yet Doctor Houston cannot see that there was any connexion between the one morbid appearance and the other. To my simple apprehension there appears to be a very close connexion, indicating a disposition in the creature to the production of parasitical animals, which in the abdomen appeared in the form of hydatids, and in the lungs in that of tubercles, an opinion which is supported by a fact mentioned incidentally by Andral, who found, in conjunction with M. Dupuy, tubercles intermixed with hydatids of cysto-circus species in the lungs, heart, and muscles of a hog.

I have been informed from undoubted authority, that hydatids and tubercles have been very generally found in the bodies of dairy cows in Paris; and in fact we have sufficient data to conclude that tubercles and hydatids are produced in the tissues of all animals confined in menageries, or which, deprived of their natural exercise, are exposed to an unwholesome and vitiated atmosphere.

I have for some time been anxious to ascertain if tuberculous matter, before ramollissement commences, possessed a power of preserving its life at the temperature of the body from which it has been taken, and of resisting those fermentable changes to which all dead animal matter is subject. I was also desirous of trying an analogous experiment to that of Hunter, by which he ascertained that an egg is in possession of life. But since these ideas suggested themselves to my mind, I have not been able to procure any undecomposed tuberculous substance, fresh and sufficiently insulated from that of the animal matter in which it was imbedded, to admit of experiment.

The prevailing doctrine respecting tuberculous diseases has derived its chief support from Doctor Carswell's indefatigable labours in the field of pathological anatomy; and although I dissent from his views, there is not amongst his friends an individual who feels more disposed to give him the credit he so amply merits for his accurate descriptions and most satisfactory illustrations of tuberculous diseases. It is with reluctance, therefore, that I differ so materially in opinion from one who has done so much to advance the science of medicine: *that* reluctance is, however, in some degree diminished by the recollection that the doctrine I espouse has been supported by pathologists of the highest eminence; amongst others, Laennec, as we must infer from the following passage: his words are, "tubercles are accidental productions, that is *real foreign bodies which spring up* in the substance of the lungs, and may be developed in any other texture of the body." His translator and commentator, Doctor Forbes, incidentally acknowledges in a note that Laen-

nec believed in the independent vitality of tubercle, and observes, "that Laennec's views were called in question by Magendie, Cruveilhier, Andral, Lombard, and Boullard, whose researches, he says, "all tend to establish the proposition that tubercle, instead of being an accidental production, possessing a proper vitality, and developing itself by *intussusception*, like organised tissues, is in fact the result of a morbid secretion, a peculiar species of pus, an inorganic product formed by juxta-position." I trust, however, that I have adduced some strong facts and considerations respecting the parenchymatous substance of which tubercle is composed, and the laws of the animal economy, to evince that the views of this celebrated philosopher and physician were not erroneous.

(To be continued.)

THE ANATOMIST.

OSTEOLOGY.

The assemblage of bones composing the human body constitutes the skeleton, which is divided into head, trunk, and extremities.

The Trunk consists of three parts, the spine or vertibral column, the chest or thorax, and the pelvis.

The Spinal or Vertebral Column, situate in the posterior part of the trunk, supports the head, and is itself supported by the pelvis. The bones which enter into its formation are called vertebræ, of which there are two classes, the *true* and the *false*.

The true vertebræ are twenty-four in number, and are sudivided into three classes, viz. seven *cervical*, twelve *dorsal*, and five *lumbar*.

The false vertebræ are two, the os sacrum and os coccyx, both of which bones enter into the formation of the pelvis.

COMMON CHARACTERS OF A TRUE VERTEBRA.

A ring of bone, the opening of which is called the spinal or vertebral foramen.

The Body, a mass of bone placed anterior to the ring, thick, spongy, and presenting many small holes for blood-vessels.

Laminæ, two lateral processes which pass backwards from the posterior part of the body, forming the sides of the ring.

Two transverse processes, which pass outwards from the sides of the laminæ.

Four articular processes, two upon the upper and two upon the lower surface of each vertebra, which arise from the roots of the transverse processes, articulate with the vertebra above and below.

All these processes differ from the body in being formed of a more compact bony texture.

Four notches, two above and two below, which are formed by the laminæ being grooved out where they join the body. Each of these, with the corresponding notches above and below, forms a lateral hole for the exit of the spinal nerves and the entrance of blood vessels, and is called the *intervertebral foramen*.

CHARACTERS OF THE LUMBAR VERTEBRÆ.

1*st*. They are the *largest* of the three classes.

2*nd*. *The bodies* are very broad transversely, of an oval form, deepened upon their upper and lower surfaces by a more compact lamina of bone, which, projecting beyond their bodies, render them concave from above downwards upon their fore part.

3*rd*. *The laminæ* and spinous processes are broad, thick, and short.

4*th*. *The transverse processes* are long, thin, and horizontal.

5*th*. *The superior articulating surfaces* are oval, concave, and look inwards and backwards; *the inferior* being oval, and convex, directed outwards and forwards.

6*th*. *The spinal foramina* are of a triangular shape, and larger than in the dorsal vertebræ.

7*th*. *The notches*, particularly the inferior, are very large, and form larger foramina than at any other part of the spine.

DEVIATIONS.

The last lumbar vertebra has its body cut off obliquely upon its sacral aspect, so that it is much thicker before than behind. Its transverse processes also are short and rounded.

CHARACTERS OF THE DORSAL VERTEBRÆ.

1*st*. They are intermediate in size between the cervical and lumbar vertebræ.

2*nd*. *Their bodies* are thicker behind than before, and more convex transversely, assuming upon their surfaces a triangular rather than an oval form. On either side at the upper and inferior margins each body presents two small

depressions, the upper being the larger, which, with the intervertebral cartilage and the contiguous vertebræ form depressions for lodging the heads of the ribs.

3*rd*. *The laminæ* are broad and strong.

4*th*. *The spinous processes* are long, prismatic, tuberculated at their extremities, and directed obliquely downwards.

5*th*. *The transverse processes* are long and directed backwards; on the extremity and anterior aspect of each is an oval articular surface for the tubercle of the rib.

6*th*. *The articular processes* are nearly vertical, the superior tooking backwards, the inferior forwards.

7*th*. *The spinal foramen* is smaller than in the cervical or lumbar vertebræ, and is of an oval shape.

8*th*. *The notches* are situated anterior to the articular processes.

DEVIATIONS.

The *first dorsal vertebra* has a full depression for the head of the first rib, besides the half depression for the second; its body is longer in the transverse direction, its spinous process is strong and horizontal, and its particular processes are oblique.

The 10*th*, 11*th*, and 12*th*, have each a full depression upon the body for the corresponding rib, but want the depression on the transverse processes: the 12*th* resembles a lumbar vertebra in the shape of its body, and of its inferior articulating processes.

Characters of the Cervical Vertebræ.

1*st*. They are the *smallest* of the three classes.

2*nd*. *Their bodies*, deeper before than behind, and long transversely, are concave from side to side upon their upper surface, and concave from before backwards upon their lower.

3*rd*. *The laminæ* are broad and thin.

4*th*. *The spinous processes* are short, horizontal, and bifid.

5*th*. *The transverse processes* also bifid and short, are grooved upon their upper surface for the spinal nerves, and perforated by a round hole at their bases for the vertebral artery, the direction of which is upwards.

6*th*. *The articular surfaces* are oval in shape, the superior being convex, and directed obliquely backwards and upwards; the inferior being concave, and directed obliquely forwards and downwards.

7*th*. *The notches*, nearly of equal size, are small, and anterior to the articular processes.

8*th*. *The spinal foramen* is large and triangular.

Deviations.

The first, or atlas, consists of a large bony ring enclosing an irregular hole; instead of a body, which is absent, the anterior arch of the ring of bone presents a small tubercle before, and a smooth oval articular surface behind, for the odontoid process of the second vertebra. From the extremities of this arch the ring acquires great density and thickness, and presents upon its upper and lower aspects the articular processes, the superior of which, horizontal and oval from before backwards, look upwards and inwards, and articulating with the condyles of the occipital bone; the inferior circular, slightly oval, and directed downwards and inwards, to articulate with the second vertebra. The transverse processes are not bifid, but are pierced at their bases by the foramen for the vertebral artery, the direction of which is upwards and backwards, and behind the superior articular surface is a groove, which marks the continued course of this vessel. The spinous process is represented by a small tubercle upon the inner surface of the ring, corresponding to the articular surfaces, are two small tubercles, to afford attachment to the transverse ligament, which ligament separates the ring into two, the anterior being for the odontoid process, the posterior for the commencement of the spinal chord.

The second, or axis, is distinguished by the great length of its body, from the upper edge of which arises its large tooth like, or odontoid, process. This process presents anteriorly a small articular surface for articulation with the ring of the atlas, and posteriorly a second, which moves against the transverse ligament, whilst its apex presents an accuminated top, to which the check ligaments are attached. The laminæ are very thick and strong, and terminate behind in the spinous process, which is likewise strong and bifid: the vertebral foramen is heart shaped, the apex being behind. The superior articular surfaces are convex, and directed a little outwards, whilst the inferior, looking downwards and forwards, are smaller and flat.

The transverse processes, not bifid,

are short and directed downwards, the aspect of the foramen for the vertebral artery, which its base being obliquely upwards and outwards; the superior notches are behind the superior articular processes, whilst the inferior notches are before the inferior processes.

The seventh cervical vertebra is larger than the others; its spinous proccss is long, not bifid and prominent, and the foramina, when they exist in the transverse processes, give passage to the vertebral veins.

In examining the peculiar characters of the different vertebræ, it is best to select one from near the centre of each class: thus the 3rd Lumbar, the 6th or 7th Dorsal, and the 4th or 5th Cervical, offer the best examples of the class to which each belongs, for as the cervical vertebræ approach the dorsal, they begin to assume more or less the characters of the latter, and the last dorsal vertebra, upon its under surface, presents the characters of a lumbar vertebra.

FALSE VERTEBRÆ.

Os Sacrum.

Figure, triangular, *the base* resembling a lumbar vertebræ; *the apex* presenting a small oval surface to articulate with the os coccyx; *the sides* presenting two surfaces: the superior, large and irregular for articulation with the ilium; the inferior thin for the attachment of the sacro-sciatic ligaments.

Pelvic surface, anterior, smooth, concave from above downwards, traversed by four transverse lines, and presenting on either side of the median line four holes, called *anterior sacral,* for the transmission of the anterior sacral nerves.

Dorsal surface, irregularly convex, rough, presenting in the median line irregular processes of bone (spinous processes), and more externally on either side tubercles of bone analagous to the articular processes of the true vertebræ. On either side of the median line are the *posterior sacral foramina,* for the transmission of the posterior sacral nerves.

Spinal canal, at the base is large, and of a triangular form, runs at the dorsal aspect of the bone, and terminates in a triangular fossa at the apex of the bone, where it is bounded on either side by two tubercles, which are in general prolonged to join the base of the os coccyx.

Os Coccyx.

Figure, triangular, the base articulating with the sacrum.

Anterior surface, smooth, and supports the extremity of the rectum.

Posterior surface, rough, for attachment of ligaments and muscles.

Cornua, are two, placed superiorly, which unite with the last tubercles of the sacrum.

THE THORAX

is formed by the dorsal vertebræ posteriorly, the ribs laterally, and the sternum anteriorly.

The Ribs,

twelve in number, are divided into *seven true* and *five false;* the two lowest of the false being called *abdominal,* or *floating ribs.*

The true ribs are each attached to the sternum by separate cartilages.

The three superior of the false ribs have their cartilages attached to each other and to the cartilage of the seventh rib.

The false or floating ribs have their cartilages free.

Common Characters of a Rib.

The head, round, and divided by a ridge into two articular surfaces, which are received into the depressions on the sides of the bodies of the dorsal vertebræ, the ridge affording attachment to an interarticular ligament.

The neck, narrow and round; at its union with the shaft is

The tubercle, a prominence of bone, with an articular surface looking backwards and downwards to articulate with the transverse process of the vertebræ beneath.

The angle, is marked by a rough line, and is the point where the rib makes its great turn to circumscribe the thorax.

The shaft,—that portion of the rib which extends from the angle to its sternal end, presents an external smooth convex surface, and an internal concave one; its upper edge being round and smooth, its lower edge thin, and grooved for the intercostal vessels, and its sternal extremity offering an oval pit for the reception of the costal cartilage.

DEVIATIONS.

First Rib.

Has no angle, is very short and flat, a round head with no ridge, and but one articular surface, its extremity being thick and strong; one surface is directed upwards, the other downwards; the superior presenting a ridge for the at-

tachment of the anterior scalenus muscle, which separates two grooves, one for the subclavian artery, the other for the subclavian vein.

Eleventh and Twelfth Ribs,

have neither angle, tubercle, nor groove, are very short, and the head resembles that of the first.

THE STERNUM.

Figure, flat, elongated, broad above, narrower in the centre, and pointed inferiorly.

Anterior surface, is marked by four transverse lines, and is rather convex.

Posterior surface, smooth and concave.

Upper piece, quadrilateral and thick, is concave from side to side upon its upper edge, and presents at each superior angle two semilunar depressions for articulation with the clavicles; its lower edge is united to the second piece; its lateral edges receive on either side the cartilage of the first rib and half that of the second.

Lower piece, long and narrow; receives by five depressions upon its lateral edges, the cartilages of the five inferior true ribs, and by a notch at its superior angle half the cartilage of the second rib, its inferior extremity being long and thin, and ending in a cartilaginous epiphysis, called the

Ensiform cartilage, which is generally bifid, and pierced by a foramen, its direction being variable.

The London Medical

AND

Surgical Journal.

Saturday, April 15th, 1837.

THE WORKING OF THE ANATOMY ACT.

Important as the Anatomy Act was for the purposes of Medical Education, yet its most zealous advocates were quite aware of its imperfections. With these, however, they deemed it expedient to get the Bill passed through the Houses of Parliament, as it was of great importance that the dissection of dead bodies should meet with the sanction of the Legislature, and they trusted to future opportunities of remedying such defects of the Bill as experience might point out, and which the Government could, without outraging the feelings of the community, venture to correct.

One of the most serious evils of which the teachers of Anatomy have had to complain, has not arisen from the framing or spirit of the Bill itself, but from the incompetency or impropriety in the conduct of those individuals who were appointed by the Goverment to regulate and manage its operations. We allude to the Inspectors of Anatomy in Scotland and Ireland, as well as in England. In each of these countries the grievances which have been complained of by the Anatomical teachers have been of so serious a character that it is now full time this important subject should be brought before the Legislature, in order that some means may be contrived to ensure a just mode for distributing bodies for dissection to the different Schools of Anatomy, as well as to prevent any undue interference of the Inspectors or their deputies. It is now more than two years ago since a remonstrance was sent up to the Home Office, signed by all the respectable Anatomical teachers in Edinburgh, complaining of the gross misconduct of Dr. Craigie, as Inspector of Anatomy; and, notwithstanding every art which was used, and every intrigue which was set on foot to retain him in his office, his misdemeanours were of so deep a die, that the Government considered it imperative that he should be dismissed the public service about the commencement of the last Session.

In Dublin the Anatomy Bill, under the administration of Sir James Murray, was very differently received by the

teachers and students of anatomy than it had been in Edinburgh under the direction of the (Cryssipus) of the North; and this was more praiseworthy upon the part of the Hibernians, when it is remembered the ample supply of subjects, and the very small pecuniary remuneration demanded for them, which, together with the abilities of the lecturers, drew to Dublin so large a concourse of students.

In Cork, however, the working of the bill presented a very different aspect, having an assemblage of features unique and characteristic of "the beautiful city." The students of this southern capital had so long been accustomed to nightly depredations in their visits to the grave, that it was thought a prudent and wise policy not to interrupt their customary avocations by a nonsensical application of the new law, and therefore free permission was given by the liberal Inspector to continue their useful pursuits; and in order to protect them from any interruption, he furnished with the certificates such as are required by the act, only leaving it optional with the student to baptize the subject, and taking care to distinguish the sex.

In London, where procuring bodies for dissection was always a matter attended with great difficulty and enormous expense, the Anatomical Bill was looked upon as a great boon to the students of medicine, and, in consequence, the administration of the new law created much anxiety. The principal duty which devolved upon the Inspector was to distribute the bodies equally to all the different schools, giving each a due proportion according to the number of students. To accomplish this object, a difficulty arose with regard to the parish officers, these having the power of giving the subjects to whom they pleased, or of not giving them to any one; so that the Inspector, in order to distribute the bodies equally to all the students, was compelled to make some tacit agreement with the parochial authorities.

In making these arrangements, the Inspector was too often frustrated by the sordid intrigues of certain anatomical teachers, who not only exercised their influence to secure for themselves the bodies from particular parishes, but to prevent those subjects which they did not require for their own students, being sent to other schools. With a view of assisting the Inspector to surmount the difficulties which this system had imposed upon him, an association of the teachers of anatomy was formed, with his full approbation, for the purpose of agreeing amongst themselves, to insure an equal distribution of subjects. They agreed that each teacher of anatomy, no matter the number of his pupils, should have one subject at the commencement of his course, which was not to be included in the supply for the students; and that the future supply was to be regulated by the official return of students to the Home Office. However favourable all matters seemed under these circumstances, and with all apparent efforts for the impartial operation of the law, yet but a comparatively small number of the teachers of anatomy have expressed themselves satisfied with the manner in which the Inspector has performed his public duties; for whilst he has allowed schools connected with certain hospitals to have a much larger share of dead bodies than they were legally entitled to, he has on the other hand, not supplied the other schools with the number which they had a right to demand; and in one case, which must be fresh in the recollection of our readers, where repeated remonstrances having had no avail, a direct

application was obliged to be made to the Secretary of State for the Home Department, which, in justice to the noble Lord at the head of that department, received the most prompt and decided attention. It therefore still remains a great desideratum with respect to the Anatomical Bill, not only that the Inspector shall be controlled in the just arrangement in the distribution of subjects, but it would be of great importance, if the legislature would compel the parish authorities to place the subjects under the immediate disposal of the Inspector, so that all jobbing and intrigue with teachers and parish officers might in future be altogether prevented.

REVIEW.

The Cyclopædia of Practical Surgery, comprising a Series of original Dissertations on operative Medicine. By an Association of Physicians and Surgeons. Edited by William B. Costello, M. D., Member of several Learned Societies both National and Foreign. Part I. April. London, Sherwood & Co.

We hail the first number of this national work, which redounds to the credit of all engaged in its execution. Such a production was a desideratum in British medical literature. The nature of the undertaking is thus explained by the editor:—

In publishing the first number of the "Cyclopædia of Practical Surgery," a word of explanation is due to those who, feeling an interest in the success of the work, have remonstrated against the delay that has occurred in issuing it, and which was in some degree unavoidable. It would, doubtless, have been a matter of little difficulty to unite such a number of writers, as would complete the whole work in less time than it has been found necessary to bestow on forming the plan, and developing the original conception of the Cyclopædia. One moment's reflection will suffice to show, that precipitation would have defeated the great object in view, which was to obtain the co-operation of men, whose names alone would be an authority on the various subjects on which their pens were to be employed. To accomplish this purpose required great exertions, much patience, and, in not a few instances, it was only by the most earnest and persevering entreaties, that eminent individuals, reposing on the laurels they had already won in the field of science, could be induced to impose on themselves any fresh task. Nearly three years have been devoted by the editor, to the collection from various languages, of the best sources for reference, to correspondences, and journeys throughout the three kingdoms, for the purpose of personal interviews with distant contributors. The result has been such as to justify the most sanguine anticipations. Eighty-six contributors are enrolled for the production of the Cyclopædia, amongst whom will be found some whose reputation is European—some who are honourably known to the profession throughout these realms—and all, or nearly all, already distinguished in the ranks of the profession.

Without such a reunion of talent, it would have been impossible to achieve the object desired, which is to record the present state of surgery in a manner that cannot fail to be useful to the profession at large, as well as creditable to the writers engaged in this important enterprise.

Another motive for retarding the publication, has been the desire expressed by the authors of the earlier articles, to be allowed time sufficient to do justice, as well to their own reputation, as to the importance of a work, which, on all sides, is expected to assume a national character.

The editor had deemed it better to put off the publication of any portion of the Cyclopædia, until the time when its maturity was so far established, that the several numbers could be brought out in uninterrupted succession, rather than by a premature issue of some of the earlier numbers, to incur the risk of any momentary interruption in its course, when once begun; and he has now the satisfaction of stating, from an inspection of a large portion of the manuscripts already sent in, that the work, instead of exceeding the proposed number of parts, will in all likelihood fall short of it.

It may, perhaps, become a question in the minds of some, that in a work of so purely surgical a character, as the present, any place should be assigned to the articles composing the obstetric division.

The objections to which their introduction might be deemed liable, have neither been overlooked, nor slighted. After due deliberation it was thought most advisable not to exclude this matter, for the following reasons:—1st, That all the articles of the obstetric division, taken together, will not occupy even a single number of the whole work, and consequently that they might be fairly admitted without defeating the aim of the projectors of the Cyclopædia, which is to impart the fullest information, in the concisest form.—2ndly, The Cyclopædia not being destined exclusively for any particular class of readers, but for the entire profession, it was presumed that a review of the present state of obstetricy, in which the views and experience of the very able men to whom this section of the work is confided, should be interwoven, could not fail to be acceptable to most of our readers.—3rdly. Many of the duties of the obstetrician consist of manipulations so purely surgical, that a sanction seemed to be given for the consideration of the whole subject, if for no better reason than to elude the reproach of being incomplete. These reasons, in our estimation, have had sufficient weight to counterbalance objections which, we acknowledge, have been to us a source of anxiety and doubt. We owe it, however, to the profession, to confine those obstetric articles, which are strictly medical, within very narrow limits.

The articles in the present part are as follow. *Abdomen*, by B. B. Cooper, Esq.; *Abortion*, by Michael Ryan, M.D.; *Abscess*, by W. B. Costello, M.D.; *Acupuncture*, by John Elliotson, M.D.; *Adhesive Plaster, Aide, Albugo, Alse, and Alum*, by W. B. Costello, M.D.; *Alveoles*, by T. Bell, Esq., F.R.S.; *Alvine Concretion*, by Alexander Monro, M.D.; *Amaurosis*, by Frederick Tyrrell, Esq.; *Ambulance*, by J. G. Millingen, M.D. The names of the writers are a sufficient guarantee for the excellence of the articles, every one of which is entitled to high commendation, while those on practical subjects are very ably executed.

The Cyclopædia of Practical Surgery will be a work of authority and reference, and is well entitled to encouragement from every medical practitioner. We entirely agree with the editor, as to the necessity of including Obstetric Surgery, and no one in active practice, or acquainted with foreign literature, could sanction the exclusion of such an important section in a Cyclopædia of Surgery. When we look at foreign works of this kind, and look at our own Encyclopædiæ, we find this branch included, and four times more space allotted to it than in the work before us. In our opinion the objection is futile and absurd, and will not obtain with the great body of general practitioners in the United Kingdom.

NORTHERN CIRCUIT.

LIVERPOOL, APRIL 6.

(Nisi Prius Court.)

HENSMAN *v.* KING.

This was an action to recover the amount of a medical bill.

Mr. SERGEANT ATCHERLEY and Mr. CROMPTON, were for the plaintiff, Mr. CRESSWELL and Mr. WEIGHTMAN for the defendant.

On the part of the plaintiff, his son, who had attended the case with him throughout, and Mr. Dawson, a medical gentlemen, well known in this town, who had been twice called into consultation, distinctly denied the existence of any fracture or dislocation, and these witnesses, with several other medical witnesses for the plaintiff, approved of the mode of treatment which the plaintiff applied to the case, and that the disease of the bone which manifested itself, arose from constitutional peculiarity.

Mr. Cresswell addressed the Jury for the defendant, and called witnesses to prove his charge of negligence and ignorance.

Mr. Robert King, son of the defendant said—In the early part of November, 1830, I became lame of my right foot—was able to walk home to my father's house, and afterwards the plaintiff was called in to attend me; on the second day after he examined my leg, and said I had sprained my ancle, and that it would be perhaps a week or two before I got the use of it. He ordered a lineament to be applied—I could walk, but it was rather painful. I used a stick, a few days after the accident, for the purpose of coming down stairs—the crutch was too long, and I fell down stairs upon my lame foot. I was assisted into an adjoining room. The plaintiff was informed of what had happened; but I do not think he made any fresh examination of the foot—but leeches were applied. The inflammation increased afterwards and evidently extended up to the hip in four or five days. During all this time the plaintiff was in regular attendance, and his son also came, and

the latter made an incision in the outer side of the ancle. There was a considerable discharge from the wound, and I was compelled to be constantly in bed. I had to lie on my heel, but at length it became sore, and I occasionally rested my leg on the inner ancle. My mother called the plaintiff's attention to the swollen state of the ancle, and afterwards he was shown the other ancle. I complained very often of the pain I suffered. If I attempted to move my leg the pain was excruciating. Either the plaintiff or his son told me at this time that they thought I should be well in February. When my leg was dressed bandages were put on, and these were begun upwards. An abscess formed in the calf of the leg, and on the 11th of February, a piece of bone came out. My mother said to the plaintiff, who was present, that she thought it dangerous, and he said it might be expected. The second discharge of bone was, I believe, on the 8th of March. This was while the leg was being dressed. The leg varied very little in size. The plaintiff used frequently to measure it. I was recommended to try country air, and went to Bootle. Mr. Dawson, who had been called in some time before, was again called in on the 18th of March, and the wound probed. The same treatment was continued of cold fomentations, &c., but the ointment was a little changed. I recollect a third piece of bone coming away, and my leg being more swelled. Once before I went to Bootle on the 4th of April, 1831, I had attempted to walk on crutches, but found myself worse. On the 8th of April the plaintiff came over to Bootle to see me; I was then much in the same state. He recommended me to point my toe and endeavour to set my foot to the floor, but in trying to do so I felt great pain. On the 14th he came out again to see me, and his son made an incision in the calf, and put lints into it. After that another piece of bone came from the ancle. On the 26th of April the plaintiff was told of my intention to go to Tolmorton to see Mr. Taylor, the Whitworth doctor, but he did not approve of it. I did go, and under Mr. Taylor's treatment I was able to walk with a crutch in about a month, and without crutches in about five months. Before the accident my health had been good.

Cross-examined by Sergeant Atcherly. —The first accident was occasioned, I believe, by walking in Everton on the 5th of November. I believe the accident was occasioned by slipping in the street in Everton, and not by lifting weights in the neighbourhood of this town. Question. —Will you swear that you did not attribute the cause of the injury to lifting weights in the neighbourhood of the Town-hall?—I won't swear that I did not. The plaintiff was told of that as well as of the slip. I will swear that I did not complain of the left leg, and that leeches were not applied to it. The plaintiff was not specially sent for, but happening to be attending another member of the family, he was shown my leg; but I dont remember that I had much pain till after the fall down stairs on the third day. The plaintiff and his son attended me from day to day. I kept a diary from the 6th of March, 1831. I have a tolerable use of my leg now. There is a discharge from my leg still. Mr. Taylor attends me for it. He was last with me about three months ago. I have perhaps been twenty times at Todmorton to see Mr. Taylor. I am not now taking any medicine, but applying salve in the daily dressing. I was able to walk in the street in October, 1831, without crutches. I never had any swelling in the glands of the neck. I have one sister. She had never any swelling of the kind either. My brother had an abscess in the shoulder about three years previous to my accident. The plaintiff came twice a day to see me, and dressed my leg also once or twice a day. I thanked him for his attendance, and thought he had been very kind to me.

Re-examined.—My opinion altered after I benefitted by Mr. Taylor. My brother was young at school when he had the abscess. He had hurt himself at school, but I was not present at the time.

Mr. James Taylor.—I am a surgeon, and am a descendant of the family that first became celebrated at Whitworth. I became a member of the College of Surgeons in 1825, and settled at Todmorton in 1829. I have a brother who is also a surgeon, and who was with me in consequence of illness at the time Mr. and Mrs. King brought their son, the last witness, to me in 1831. I found the sole of his foot turned outwards and downwards. The inner ancle projected very much, and the leg was much swelled, and hard almost as a board. I was quite satisfied of a fracture, and of the kind of fracture, from the position of the foot, before I touched it. I made no inquiry at the time about the treatment. The defendant determined to leave his son with me, as I told him I could not otherwise do any-

thing for him. I thought the case would be tedious. There was a great discharge from two wounds in the leg. I never saw any appearance of scrofula, nor had I any suspicion. The treatment of the leg previously would have accounted for the appearances presented, and for the exfoliation of the bone. I gave him very little medicine—not, perhaps, half a dozen bottles all the time he was with me. He was under my care about half a year when he left first. I remember his coming back to me in 1833. The discharge was still great. I made an examination by laying the wounds more extensively bare when he first came, and then found that there was a fracture of the bone, and which accounted for the discharge. I have seen him about three months ago, and there is still a slight discharge which is owing to the remaining portion of diseased bone. During all the time I have attended him I have never seen any symptom of scrofula.

Cross-examined.—I have no doubt at all that the patient had false fracture. I could judge from the appearance of the limb that it had been of at least three month's standing. I should think that any surgeon could tell by the sight or the touch whether there was a dislocation of the bone. I should think a man could not walk with false fracture. A mere fracture would not produce diseased bone unless the limb should remain unreduced.—Did you ever see a case of dislocation of the ancle, even without being reduced, create abscess? No: but if the motion of the ends of the bone creates inflammation, an abscess may be the result. If the matter in the abscess was allowed to lie upon the bone it would create a diseased bone. The disease in the bone did not arise from any peculiarity of constitution. The medicine I gave was principally of an aperient kind. The limb is not entirely reduced, and never will be. There has been no disease in the joint of the ancle. He cannot walk yet safely without the support of the boot he wears. With the exception of dressing the leg, and some aperient medicine, I used no other means with the leg than the laced boot.

Other witnesses were called principally to prove that the patient had no constitutional complaint.

The learned Judge, in summing up, said that if the plaintiff had ever been mistaken in his treatment, still, if the Jury thought that he had used ordinary skill and attention, they must find their verdict in his favour.

Verdict for the plaintiff for the amount claimed, 49*l.* odd.

The trial lasted all day. The court was crowded.

THE

EDGEWARE ROAD MURDER.

CENTRAL CRIMINAL COURT

Tuesday, April 11th, 1837.

Second day,

Conviction of both Prisoners.

MEDICAL EVIDENCE.

The following account of the medical evidence in the case of the King *v* Greenacre and Gale, will be read with interest by medical practitioners. It shows the importance of studying medical jurisprudence and of discriminating between contusions and wounds inflicted before and after death.

The identification of the dismembered body of the unfortunate deceased, (her head, trunk, and feet having been scattered in remote parts) solely rested on medical evidence, and that testimony was satisfactory and conclusive. The evidence of Mr. Girdwood proves him to be a highly scientific and well informed medical practitioner. It also shows that he is well acquainted with the rules of medical evidence. Witnesses of his information have nothing to fear from advocates in courts of justice. Were the majority of medical men equally well informed, and they decidedly ought to be so, when human life is at stake, we should not so frequently witness the lamentable exposures of medical ignorance in criminal as well as civil proceedings.

The importance of medical evidence is considered so great in Continental Europe, that certain eminent medical men, who have entirely devoted themselves to medical jurisprudence are only admitted as witnesses. This is a most wise ordination, for it will be found on inquiry of the most distinguished physicians and surgeons that they are totally unacquainted with the minutiæ of many physiological, pathological, and toxicological points which may become subjects of inquiry in courts of justice. This proves the necessity of studying medical jurisprudence which explains such points according to the received opinions of the profession.

Mr. John Birtwhistle was then sworn and examined by Mr. Adolphus as follows:—

Witness.—I am a surgeon, and reside

in Mile-end-road. On the 6th of January I saw a human head in the dead-house at Stepney. I examined it closely on the following day, the 7th of January. It was then exactly in the same state. I found that it had received a blow on the right eye, the coats of which were injured, and the humours consequently let out. There was a blackness around the eye from the rupture of the smaller vessels. It was what I should call a tremendous black eye, which appearance was caused in my opinon before death. After the death of the body a blow on the eye would not have produced that effect. The eye itself remained in the head devoid of its humours. There was a crescent-shaped laceration on the cheek, and the lower jaw was fractured. The former, in my opinion, was produced by incision, and the latter was produced by a crush or jam. Both appearances, I think, took place after death. There was also a wound on the top of the head, apparently produced by a blow. Upon examining the neck, I found that the cervical vertebræ had been sawn through. A saw of this description (the one found in Greenacre's box) would have been likely to have done it. I have since compared this saw with the bones of the neck, and found that it exactly fitted. After I had examined the head and neck in the manner described, I put it into a small hamper, tied it up, and sealed it with my own seal. I then gave it to two policemen, who took it to the work-house at Paddington, where I saw the hamper on the following morning with my seal unbroken. I subsequently examined the head in company with Mr. Girdwood, the surgeon, who agreed in opinion with me, that the wounds on the face and the injury to the head were produced after death, and that to the eye was produced before death. We then opened the head, and found an internal wound on the back part, which did not appear externally. I think from its appearance that this internal wound was produced before death. My opinion is, that if a blow had been struck on the eye, the fall from the force of that blow would have produced the wound on the back part of the head. It appeared to me that the throat had been cut before death. The head was entirely free from blood, which I think would not be the case if the throat had been cut after death.

Cross-examined by Mr. Price.—I never witnessed a case in which the head was exhausted of blood by means of a broken neck. The blood will flow while the body is still warm. Warmth might remain in the body for an hour or two after death. I have been a surgeon since 1827, and have examined many bodies recently, but not immediately after death. Mr. Girdwood attended the latter examinations of the head at Paddington workhouse. I consider him a very clever surgeon. There is a distinction between a bruise and a contusion. The latter might not produce any blood upon the surface, but a bruise always does. I did not examine the neck of the deceased myself, but I was present on the 8th of January, during the whole examination of the head. The bones of the neck were taken out by Mr. Girdwood, leaving the flesh only. There was an observation made in dissecting the neck, with regard to the retraction of the muscles. After the column of the neck had been separated from the neck, Mr. Girdwood took possession of it, and I believe has it now. From the jagged appearance of the vertebræ of the neck, I should say that it must have been sawn through, and not cut with a knife. The saw produced would have done it. I did not examine the spinal marrow. The internal wound on the back of the head inclined towards the left side. I cannot say whether or not that blow might have caused a suffusion of blood in the head. It might or might not.

Mr. G. S. Girdwood, examined by Mr. Bodkin.—I have practised as a surgeon for twelve years, and am surgeon to the parish of Paddington. On Sunday, the 8th of January, I examined a human head, in the workhouse, in company with Mr. Birtwhistle, the last witness, and some other gentlemen. The result of all the examinations of he body of the deceased were published in the newspapers on the following day, the 9th of January. On Sunday, the 8th, I first saw the head at Mile-end workhouse, and made a minute examination of it on the following day, when it was brought to Paddington workhouse. The head had the appearance of being that of a female. The nose had a slight twist on the right side. There were several wounds and bruises. There was a large wound on the left cheek, in the shape of a crescent, commencing under the left eye and terminating within about an inch from the mouth. That was an incised wound, and merely superficial. In my judgment it was inflicted after death. There was under the wound just described a large contused wound, producing a fracture of the jaw, inflicted after death. On the other side of the

face there was another contused wound at the right angle of the jaw, and there too the bone was broken. On the same side of the jaw there was another contused wound, opening right through into the mouth. Both the latter wounds were, I believe, produced after death. Several of the teeth of the upper jaw were forced out, and the tongue was cut between them. This occurred also after death. The right eye had received a blow. There was a wound in the eye itself above the pupil, which had entered into the eye and occasioned the escape of the humours. About and around the eye there was an ecchymosis surrounding the eye, commonly called a black eye. Within the area of this bruise there were three small superficial wounds—one was external to the orbit of the eye; the other was superior to the orbit of the eye, and the third was on the side of the nose, and exposed the bone of the nose. I believe the wound of the eye and the discolouration around it to have been produced before death, and the three marks I have mentioned after death. The blow given would imply great force, from the eye being knocked out. The blow might have been produced by a fist. The blow produced no abrasion of the skin, from which I should say that the blow must have been a dull one, but it is impossible for me to say whether the blow was inflicted with the fist or with an instrument. It certainly would have deprived the party so struck of sense for a time. The length of time would depend entirely upon the nervous system. The effect of such a blow upon a female would very probably have deprived her of sense so as to give an opportunity for further injury. The blow being struck in front, if any injury to the back of the head occurred at the same time it would have increased the insensibility or stupor. On the crown of the head there was a large contused wound, at one end of which there were two contusions, but these and the wound itself took place after death. The scalp of the skull was cut crossways. The witness proceeded to describe the appearances which were exhibited in the interior of the skull. The red appearance of the *dura mater* indicated a disturbance within, produced by the injury in front by some opposing or resisting body. The internal injuries at the back of the head must have been occasioned by that part coming in contact with some hard substance. The injuries to the eye could not have been caused by a blow struck on the back part of the head, whether that blow was occasioned by a fall or otherwise. I afterwards proceeded to examine the neck, and found that the fifth bone had been sawn, but not quite through, from front to back. The remainder appeared to have been broken off. There was no appearance of dislocation of the neck. The fleshy part appeared to have been cut with a sharp instrument such as this (the knife found in the prisoner Greenacre's box.) The muscles of the neck were retracted. They would continue so while life existed. In the case of a person meeting a sudden death that appearance of the muscles would continue for some hours, but the retracting power would continue to grow less every hour. I found all the large blood-vessels of the head quite empty. Independently of the separation of the neck from the head, there were superficial cuts around the neck. The principal cuts were not continuous, in consequence of the muscles being placed lower down in the neck, so that the incision which cut through the windpipe is full two inches lower than the first incision. The cut through the windpipe also cut through the carotid arteries, and it is on a level with the division of the gullet. The first superficial cut left a flap of skin hanging over, and adhering to the body.

By Lord Chief Justice Tindal.—The cut above was the first cut, and all the cuts in the neck must have been inflicted during life, or very shortly after death. The suggestion which occurred to my mind by all these appearances was that if the blow which knocked out the eye had not been sufficient to produce death of itself, the cutting of the throat would of course have at once occasioned death.

Cross-examined by Mr. Price.—A bruise and contusion I should say are synonymous terms. Ecchymosis might be produced either by one or other, before death, but not after. A blow at the back of the head would produce a lodgment of blood within the cranium, but not to any extent; I never knew a blow on the back of the head produce an injury on the opposite side of the head, and it could not occasion a lodgment of blood in the eye. It is impossible to produce all the phenomena of ecchymosis on a cold and dead body. I am the author of a reported inspection of the head of a female published in the *Medical Gazette*. Blood will flow from a vessel divided after death for several hours. I think an experiment took place in which blood flowed for sixteen hours after death, but I speak from memory and may not be quite cor-

rect; I cannot say how long the head would take to empty itself of blood after death. The separation of the head from the body, in this instance, could not have been done by a professional man as an experiment. I did not observe any injury to the spinal marrow, judging from the external bones. I did not examine the marrow itself, but there might have been an injury to the spinal cord which would cause death, without producing any external appearance. An injury to the spinal marrow might produce instant death, but it is not very likely that such an instance could occur without leaving some slight trace of the injury externally. The fact of the head having remained for some days in the water would not have removed the appearance of external injury. To ascertain if a person died from an injury of the spinal marrow, it would be necessary to examine the spinal marrow itself. A blow externally might so injure the spinal marrow as to occasion death, but I cannot imagine that it would do so without leaving some appearance in the spine. I cannot imagine a case in which the sudden muscular action of the neck would occasion death unless it caused at the same time an injury to the spinal marrow.

By Lord Chief Justice Tindal.—If such an injury had occurred to the deceased, I must have detected it during my examination and dissection of the neck of the deceased.

By Mr. Price.—All sorts of accidents producing injury to a vital part would necessarily produce death. If the part of the spine which I did not examine had received an injury it might have caused sudden death. I examined the body of the deceased on the 29th of January, and from the appearance of the cut incisions I should say that the mutilation must have taken place immediately after death, both from the bloodless state of the body itself and other circumstances. The stomach was removed from the body and looked into. There was no injury to the the coats. It contained undigested food, and I think it had a spirituous smell, but I did not observe what description of spirit. My examination of the stomach was very cursory, and merely with a view to ascertain whether any injury existed in that part which could have caused death. The deceased was about five feet six inches and a half high. She was, as far as outward appearances went, a well formed woman, stout, and strong, and, as far as I could judge, in perfect health at the time of her death.

Re-examined by Mr. Bodkin.—I am quite certain that the injury to the eye was inflicted during life. There was a puffiness and thickening around the eye which could not have taken place after death, independently of the discolouration. The appearance in the orbit of the eye would have been produced by a violent blow. Looking at the whole appearance of the body, and other members of the deceased, I find that there is in the first instance a severe blow in the eye, and looking at that injury, and at the whole group of facts and appearances, I should say that they were sufficient to cause death.

Mr. Bodkin.—In your opinion was the blow at the back of the head the consequence of the blow upon the eye?

Witness.—Certainly.

Dr. James Hunter Lane, examined by Mr. Clarkson.—I am a physician and lecturer on chymistry. I examined the stomach of the deceased, in company with Mr. Guy, a medical student. On examination, I found a quantity of meat, which I supposed to be pork or beef, together with potatoes and pastry, and the whole of the fluid had a spirituous smell. The stomach was healthy and exhibited a slight redness, which usually denotes a good digestion. With regard to the spirituous smell, I came to the conclusion that it was neither whiskey nor rum, and that it was gin, to the best of my belief. I satisfied myself of that by a chymical test. The quantity of spirits, I should say, was not sufficient to cause intoxication. The progress of digestion was about half completed. I also came to the conclusion, from the absence of all morbid appearances, that the deceased could not have died from taking poison, and I should say that her death was sudden, from the fact of the food being undigested in the stomach, and that no disease appeared there.

By Lord Chief Justice Tindal.—There was no appearance of tea in the stomach.

Mr. Guy proved that he took the stomach from Mr. Girdwood, and carried it just as he received it to Dr. Lane.

Dr. Lane, cross-examined by Mr. Price.—A quantity of tea taken into the stomach would have covered the smell of gin, but not of whiskey or rum. The presumption is, that no portion of the contents of the stomach had been drawn off by evacuation. I examined the contents ten days after the 24th of December. A sufficient interval had elapsed to allow a portion of the odour to escape, but not wholly so.

Mr. Adolphus.—My Lord, that is the case on the part of the prosecution.

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XIX.

THOUGHT.

Thought not Substantial—Its True Nature Explained—Stimulus to Thought—Difference between Mind and Soul—Mind of a Dog—Proof of a Soul in Man—Ancient Opinion of Mind—Mind not Material, but Substantial—Authors who support that View—Faculty of Thinking the Result of Organization—Materialism—Authors who support that Doctrine—Seat of Thought—Antiquity of the Opinion, that different Parts of the Brain belong to different Thoughts—Seat of the Passions in the Thoracic and Abdominal Viscera—Natural Language of Emotion—Argumentum ad Percussionem—Progressive Developement of the Brain—Decussation of the Corpora Pyramidalia—Non-Decussation of the Corpora Olivaria—Proportion of the Cerebellum to the Cerebrum in different Animals—Formation of the Corpus Dentatum and Arbor Vitæ—Cerebellum of Birds—Cerebral Convolutions wanting in Idiots—Errors in Gall's System—Proper Seat of the Sensorium—Charles Bell on the Structure of the Skull—Analogy with Gothic Architecture and a Soldier's Helmet—Formation of the Squamous Suture—Unity of Organization in the Skull—Relative Height of the Brain and the Body in different Animals—Norma Verticalis of Blumenbach—Varieties of the Human Race—Caucasian, Mongolian, Ethiopian, American, and Malay varieties—Chinese, Egyptians, Hindoos, Greeks, Javanese, New Hollanders, and Esquimaux—Innate Ideas—Plato and Aristotle—Opinions of Malebranche, Fenelon, Descartes, and Leibnitz—Bacon, Locke, and Kant on Acquired Ideas—The difference between Attention, Comparison, Judgment, Reason, Memory, and Recollection—Foundation of Dr. Gall's System—Explanation of Monomania—Elementary and Compound Thoughts—Passions, Sentiments, and Talents—Phrenology—Sexual Love—Love of Offspring and Country—Attachment—Contention—Destruction—Construction—Secretiveness—Cunning—Pride—Love of Praise—Caution.

Thought is not substantial, any more than life is. It is the faculty of thinking in action. In this view of the matter mind is as much a property of one part of the corporeal system as irritability is of another part. The only stimulus to thought is sensation. The mind is not the soul; for a dog has evidently all the faculties of the mind, though not possessed of a soul. The proof of the existence of the human soul rests on revelation. We may not understand how the mind exists; but we know nothing of a blade of grass apart from its properties, and even if we knew all about it, that would afford us no ground for concluding that nothing can exist which we do not comprehend.

By all the ancient philosophers, the mind, like life, was considered to be a substance. The following authors think the mind is not material, but a substance added to matter:—Bacon, Descartes, Malebranche, Cudworth, Locke, Condillac, Price, Reid, Stewart, Brown, &c. I do not look upon thought as the result of organization, but I conceive the faculty of thinking is. The writers I have mentioned think the mind is a subtle substance, known by its properties, which are different from those of matter. Those who think that irritability is the result of organization consider that the faculty of thinking is so likewise; and the following authors are of the same opinion:

Gossandi, Hobbes, Berkeley, Priestly, Leibnitz, Buffon, Darwin, Hume, Kant, Gall, Georget, &c. These are really materialists; but the extravagance of many advocates of that side of the question, have caused the name to be considered a stigma.

Thought was always considered to have its seat in the brain; and different seats were ascribed to different thoughts by Galen, the Arabians, Albert-le-Gand, De Martigny, Willis, Vieussens, Boerhaave, Van Swieten, Haller, Soemmering, Prochaska, Cuvier, Gall, &c. The passions were placed in the thoracic and abdominal viscera by the sacred writers, the early poets, and by Hippocrates, Plato, Galen, Bordeu, Buffon, Bichat, Cabanis, Riel, &c. The argumentum ad percussionem was resorted to by different authors, as when people strike their breasts to represent emotion. Willis observed that the fore part of the brain was the seat of thought; for a man puts his hand to his forehead when he feels at a loss. Gall says the occiput is the seat of the sexual feelings; for lacivious girls, if highly excited, clap their hands to the back of the neck.

The brain progressively advances to perfection, through the several grades of worms, insects, osseous fishes, cartilaginous fishes, frogs, tortoises, serpents, lizards, birds, the rodentia, the ruminantia, the solidungulæ, the feræ, the quadrumana, and man. The decussation of the corpora pyramidalia is denied by Haller, Vicq. d'Azyr, Munro, Bichat, Chaussier, Gordon, and others. It is asserted by Aretæus, Mistichelli, Petit, Santorini, Winslow, Lieutaud, Soemmering, Gall, Cuvier, Tiedeman, and others. Meckel says the decussation is so evident, that it is wonderful it should ever have been doubted. The corpora olivaria do not decussate, resembling the optic nerves in this respect. The decussation of the posterior columns of the spinal marrow, which are expanded in the cerebellum, has not been detected, owing to the plexiform arrangements of their fibres; but we must presume their decussation, in order to account for the effects of an injury of the cerebellum, being on the opposite side of the body.

The following is the proportion which, in different animals, the cerebellum bears to the whole mass of the brain. 1. In the horse, one-seventh. 2. In the sheep, one-fifth. 3. In the beaver, one-third. 4. In the mouse, one-half. In the crura cerebelli, the grey matter is internal, forming the corpus dentatum; but in the cerebellum itself, it is external, forming the arbor vitæ. In birds the cerebellum is not divided into lobes, but has transverse layers, analogous to the appendix vermiformis. There is no division of the cerebellum, so as to form lobes, until we come to the mammalia. The crura cerebri are always in contact; but the crura cerebelli have the fourth ventricle between them. The first parts which grow from the crura cerebri are the thalami nervorum opticorum, (the posterior tubercles of Dr. Gall's system,) with the third ventricle between them. In all animals in which they are found, below the mammalia, they are hollow, and have no commissura mollis. The corpora quadrigemina are represented by some as the terminations of the respiratory columns. Between the testes is the aqueduct of Sylvius.

After forming the optic thalami, and the corpora striata, the crura cerebri are expanded into the lobes of the cerebrum; the anterior lobes being formed first. In the fish there are no hemispheres, the brain consisting of the optic thalami, and the corpora quadrigemena. Sometimes in idiots the posterior lobes of the cerebrum are wanting; in which case there are no posterior cornua of the lateral ventricles. The corpus callosum is first seen about the fourth or fifth month. The hippocampus minor is found in apes. The ventricles are now often called the figurate, or white surface of the brain; while the other is called the grey, or lobulated surface. As all the ventricles communicate with each other, and open externally at the foramen of Bichat, they may be regarded as the internal surface of the brain. This surface has the figure of an irregular cross. The rudiments of the cerebral convolutions are perceived about the fifth month of fœtal life; but they are not very evident till the seventh. In idiots they are said to be sometimes wanting altogether.

The recurrent nerves of the cerebellum, as they are called by Dr. Gall, are said by him to meet in the tuber annulare; while those of the cerebrum meet in the commissures. Tiedeman objects to this, that the commissures are seen before the convolutions; but this is quite consistent with what is seen in the organization of other parts. Gall was wrong in supposing the fornix was a commissure. He was likewise unfortunate in calling the grey matter the matrix of the white; for the latter is formed first. The sensorium is,

properly speaking, the posterior columns of the spinal marrow. In man, the brain is about the twentieth part of the weight of the body. There is a bag of arachnoid hanging out of the fourth ventricle. Magendie thinks the cerebro-spinal fluid between the arachnoid and pia mater exercises a salutary pressure.

Charles Bell thinks the thick part of the parietal bones is designed to give support to the skull; just as pinnacles are erected, in Gothic architecture, to counteract by their weight the tendency of the arches to spur outward. The dura mater, and the outer table of the skull, act in the same way as the leather lining of a helmet, and the horse-hair with which it is provided outside; they prevent vibration. He likewise observes that the inner table of the skull, which is brittle, is not jointed with sutures, but with cellular tissue, which serves the same purpose as lead between the junctions of a marble column. The squamous suture, he thinks, is analogous to the chains which surround a dome, like that of St. Paul's. Munro accounts for the formation of this suture by supposing that the ends of the bones are made so thin by the pressure of the muscles and the brain, that they overlap.

In animals below the class of birds, the sphenoid consists of two pieces, and the foramen magnum is placed far behind; so that in the resemblance beween the bones of the skull and spinal vertebræ, is very plain. But in birds, the sphenoid bone is not divided, and the foramen magnum is almost in the middle of the skull. In them, likewise, the brain occupies the whole of the skull, which is not the case with reptiles and fishes. In some cases of hydrocephalus the ossa triquetra are so enlarged that they look like additional parietal bones; and if the temporal bones be looked upon as the rudiment of a fourth cranial vertebra, the ossa triquetra are the rudiments of its ring. In the mammalia alone the ethmoid bone transmits the olfactory nerve. It would be curious to ascertain whether, in those animals in which one side of the brain is larger than the other, as the physeter, &c., one side of the body is more powerful than the other. I think it would be found to be the case.

The following is the relative proportion which the cerebellum bears to the cerebrum. 1. The human fœtus, one to twelve. 2. The human adult, one to eight. 3. The horse, one to seven. 4. The sheep, one to five. 5. The beaver, one to three. 6. The mouse, one to two. The following is a table of the proportion which the brain bears to the body, in various animals. 1. Man, one to twenty. 2. The ape, one to twenty-five. 3. The rat, one to thirty-two. 4. The sheep, one to thirty-five. 5. The cat, one to thirty-eight. 6. The pigeon, one to ninety-one. 7. The eagle, one to a hundred and sixty. 8. The salamander, one to three hundred and eighty. 9. The elephant, one to five hundred. 10. The pike, one to a thousand three hundred and five. 11. The tortoise, one to two thousand two hundred and forty. In the lowest animal in which it has been estimated the proportion is only as one to thirty-seven thousand four hundred and forty.

Monro's plan of estimating the size of the brain is perhaps the best. It consists of a frame-work, into which the skull is put, and its dimensions noted. It should be marked out into different portions, and figured, that we may know what particular parts project and recede. Blumenbach makes his five species according to the norma verticalis, taking the Caucasian as the standard of perfection. The fine examples he gives are the portraits of the best specimens he could meet with of the different races. These races are the following. 1. Caucasian. 2. Mongolian. 3. Ethiopian. 4. American. 5. Maylayan. The Chinese and Esquimaux belong to the Mongolian variety, in which the eyelids are generally oblique; while in the Ethiopian variety, they slope in a contrary direction. The American variety is between the Caucasian and the Mongolian. The Egyptians, Hindoos, and Greeks belong to the Caucasian variety; the Javanese and New Hollanders to the Malay. There is some truth, but much fancy, in this arrangement.

Plato thought ideas were innate, and that every thought was in the mind originally, and was only called into exercise by the object to which it related. Aristotle took up an opposite doctrine. The former attached too much to the susceptibility, which is one condition; the latter attached too much to the stimulus, which is the other condition. Diogenes said he had no idea of a table, or a goblet, before he saw them. Ideas are only the thinking principle in action, and are no more substantial than combustion is. Malebranche said that ideas came from God; and Fenelon, that they are God himself. Both proceed on the

identity of the soul and the mind. Berkeley and others have doubted their own existence; and that is, in fact, a necessary corollary, if the doctrine of innate ideas be followed out. They said we could form ideas of colour and hardness, even if we were not acquainted with substances which possess those properties. That, however, is not the case. But if the mind were merely a mirror, reflecting external objects, as Aristotle said it was, how could different persons betray different dispositions in the same circumstances? What are the "abstract ideas" of Plato and the "mirror" of Aristotle, but the capability of being acted on by stimuli. The advocates of innate ideas are Plato, Descartes, Malebranche, Bossuet, Fenelon, Liebnitz, &c. The advocates of acquired ideas are Aristotle, Bacon, Locke, Condillac, Buffon, &c. Bonneti, Kant, and Gall have given the best views of the nature of thought.

Sensibility being less in females and children, thought, which is built on sensibility, is less also. This holds true altogether in children; but only in some branches of thought and feeling in females. As different parts of the spinal marrow are capable of receiving different impressions from the several senses, so different parts of the brain are probably adapted to different impressions, which thus excite different thoughts. Attention is said to be the mere perception of a sensation. Comparison is the perception of a resemblance or of a difference. Judgment pronounces on the relations of several sensations. Then there are reason, memory, and recollection; the latter being the remembrance of a sensation previously remembered. Each sense acts independently of the others; but these modes of thought cannot act independently. Kant admits twenty-five different kinds of thought. His enumeration proves how arbitrary arrangements are. Physical properties are easily determined; but where can we draw distinctions in mental phenomena? It is evident that ideas of "time" and "place," which Kant places first, are not elementary; for they cannot be appreciated by one form of thought.

Dr. Gall founded his system, not on the difference of thoughts themselves in their own nature, but on the observed mode of action in different instances. Kant's is the synthetic mode: Gall's the analytic. He makes about thirty-three different kinds of thought. The first nine are the feelings; the next nine the sentiments; and the last fifteen the talents. The exercise of any one of these requires that of many others, as wit and imagination, for instance. Many of them are modifications of others, as the "love of offspring," and the "love of country." Is there any real difference between "pride" and the "love of praise," or between the "memory of thoughts" and the "memory of words?" Again, "theft" and "canning" both arise from "love of self."

It is quite a mistake to suppose, that the doctrine of different parts of the brain, being appropriated to different forms of thought, originated with Dr. Gall. Many of the most eminent philosophers have supported that opinion; but this by no means obliges us to believe that he has been right in fixing on the exact seat of each particular form of thought; or that these seats, if determined in the brain, are obvious through the skull. It may or may not be so; but it does not necessarily follow. If the whole brain presided over all the modes of thought, a man of education might be raised to the highest station as a poet, or in any other walk of literature or science. Another objection is, that monomania could not be explained on that hypothesis. I doubt not every part of the brain ministers to different elementary forms of thought; but, at the same time, I feel quite satisfied we are ignorant what those forms are. Perhaps almost all the thoughts which are considered to be elementary, are in reality compound; as is the case with those compound bodies, in physical science, which a few years ago were looked upon as elementary. But though we cannot say of any particular propensity, that it is seated in any one particular part of the brain;—for the propensity may be compound, and may therefore require the concurrence of other parts of the brain for its production;—yet we may be warranted by experience in saying, that in proportion to the size of that particular part of the brain, will be the force of that particular propensity; for it is probable that the part of the brain in question, furnishes the chief, though not the sole element of the propensity. Every observer must admit, for instance, that in proportion to the size of the brain, are the strength of the bad passions; and these passions are first manifested, because the brain grows from the base. Again, the talents are developed before the sentiments.

In the organs of the senses, and all the

other organs of the body, *cæteris paribus*, size indicates power. Hufeland says, that organology is undoubtedly true; but that organoscopy is doubtful. Below the class of birds, the brain does not correspond to the skull; and even in birds, the air in the diploe, between the two tables of the skull, interferes with any judgment we may form of the exact shape of the brain. This want of correspondence between the two tables of the skull applies with less force to the human subject; but still there are often prominences on the brain, which are not corresponded to by projections on the skull; the inner table of the skull being alone affected. It is said, however, that there generally is a development of the skull over such a part of the brain. But phrenology was established on the relation which might be observed between the propensities and the form of the skull, not of the brain, which cannot be reached before death. I think the question must be settled by experience. It is not to be proved that phrenology must be true or false; but that it is true or false.

We shall now briefly glance at the organs in detail.

1. *Sexual Love.*—This organ comprises the cerebellum. It was first established by Dr. Gall, in the head of a young widow, who was the subject of nymphomania. He found a similar correspondence between a large size of this organ, and the manifestation of strong sexual propensities, in other animals as well as man. When there is inflammation of the cerebellum, priapism is an attendant symptom. The organ is large in the celebrated Raphael, and in the Farnese Hercules. The notorious Mrs. M'Innis has quite a "bull-neck."

2. *Love of Offspring.*—This organ is placed at the base of the posterior lobes of the cerebrum. It is larger in the females of all animals than the males. In those persons who are guilty of infanticide, this organ is generally found small; as well as in those animals which quickly leave their young to shift for themselves. Those females in whom it is particularly large are very desirous of having a family.

3. *Love of Country.*—Mr. Combe does not believe in this organ.

4. *Attachment.*—Situated at the lateral part of the posterior lobes of the cerebrum. It is larger in females than males; and hence, the former, from a very early period of life, manifest a fondness for pets. It is large in Mrs. M'Innis.

5. *Contention.*—This is placed behind the ear. It is larger in males than females; and, when well developed, gives the "thumping gait, and determined voice." Its action is often violent in drunkenness, producing quarrels among companions, who, nevertheless, are very good friends. Gall first observed it in prize-fighters. It is large in Bruce, of Scotland, M'Innis, the Charib skull, and Haggart, who was hanged for murder. It is also large in gladiators.

6. *Destruction.*—Placed above the ears. It is especially large in the carnivora. Its action is not restricted to murder; but shows its influence in the destruction of everything which comes in the way, and in cursing and swearing.

7. *Construction.*—Very large in sculptors. In Michael Angelo it is enormous. It is situated at the temples, and designates a skilful workman; and Mr. Mill was guided by the size of this part in hiring his workmen. It is large in all painters; Wilkie and Haydon, for example. The beaver has this organ very much developed.

8. *Secretiveness.*—Placed above and before the organ of destruction. It gives a rounded juvenile form to the head. Some persons who have stolen articles under its influence, afterwards give them up, for the propensity only leads to the exercise of ingenuity in taking them.

9. *Cunning.*—Situated behind secretiveness. It is said to give the head a tendency to drop forward, and to one side. It is much exercised by artists and actors; and sometimes enables a murderer to conceal his crimes.

10. *Pride.*—This is the first of the sentiments. Those we have previously examined are called propensities. The organ of pride is situated on the top of the head, at the part which first becomes bald. It is larger in males and the English, than in females and the French. It is large in the Hindoo and the American Indian, and likewise in the criminal Haggart. Under the influence of this organ, the head is thrown back.

11. *Love of Praise.*—Inspired by this organ, a man consults the opinion of the world, which a proud man does not. It is large in the French, in women generally, and in the Scottish Bruce, but not in Haggart.

12. *Caution.*—The locality of this organ is at the point of ossification of the parietal bones. It is more developed in children than adults, and in females than males. Hence female animals are seldom

caught in a trap. It is large in deer, owls, and nocturnal animals in general. It is likewise well developed in Bruce, and in Egyptian mummies.

ORATION

DELIVERED BEFORE THE MEMBERS OF THE

ROYAL MEDICAL SOCIETY OF EDINBURGH,

AT THE

CELEBRATION OF THEIR CENTENARY,

February 17, 1837.

By W. B. CARPENTER,

Senior President of the Society; Member of the Royal College of Surgeons, London; and President of the Royal Physical Society, Edinburgh.

(Continued from p. 45, No. 2.)

I trust that I have succeeded, Gentlemen, in leading you to the view which I have myself been led to entertain, that the formation of the Medical Society of Edinburgh constitutes a most important era in the history of our science. And this I maintain, not only on account of its subsequent contributions to its advancement, but because it created a new field for the exercise of the intellect at the age of its greatest vigour and activity. The Societies which had previously been formed for the improvement of philosophy, had not so much in view the discussion of theories, as the collection of facts, and the performance of experiments. These were the objects of the Lyncean Society of Florence, the earliest institution of the kind, which afterwards merged into the celebrated Academy of that city; and the Royal Society of London, framed upon the plan and carrying into effect the principles of Bacon, had similar ends in view. "For the improvement of theories," says Sir C. Wren in one of his communications to it, "we need be least solicitous; it is a work which will insensibly grow on us, if we be always doing something in experiments. This is rather our task, and in many things we must be content to plant crabstocks for posterity to graft on."

The Medical Society of Edinburgh aspired to bolder objects. Unawed by the authority of their teachers, unfettered by the dogmatic spirit which was still too prevalent in the schools, its members dared to think for themselves and the overthrow of the doctrines of Boerhaave, and the establishment of the more correct principles of Hoffman, first in this University, and subsequently throughout the British empire, were among the earliest effects of that freedom of thought and expression, which this Society was the first to exemplify, and which still constitutes its leading principle. Like the compass of the mariner, it opens the way to regions of unexplored magnificence; no longer restrained within the narrow and well known channel of received opinions, the inquirer after truth can now stand boldly out into the wide and trackless ocean, confident in the security of the haven which will be his resting place, and in the richness of the mine which is to reward his exertions.

The merit of Hoffman consisted not only in the important additions which he made to our knowledge of the laws of the animal economy, especially with regard to the distinct nature of the vital properties and the influence of the nervous system, but also in his having pointed out the track by the pursuit of which still further advancement might be obtained. The interesting inquiry which he originated was most successfully prosecuted by Haller and Cullen; and although greatly modified and improved by them and their followers, his doctrines may be regarded as the germ of the systems of Phisiology and Pathology which are now universally received. It is well known that Dr. Cullen on his succession to a medical chair in this University, was the first who disputed the authority of Boerhaave within its precincts; but it is recorded on the joint testimony of Dr. Gregory and Dr. Duncan, that long before this period the fundamental doctrines of that great master had been overthrown by the members of the Medical Society, who, by the substitution of sounder principles, had created the basis on which the splendid reputation of the Edinburgh School of Medicine was subsequently raised.

I have endeavoured to trace the gradual extinction of the tendency to abstract theory and hasty generalisation which clung to Medical Science as its last stronghold until the middle of the eighteenth century. A few years later, however, witnessed its revival in the extraordinary system of Dr. Brown, whose doctrines obtained so great a temporary celebrity from the specious simplicity of their appearance, and the alleged universality of

their application. It will scarcely be denied that no common ingenuity was displayed in the construction of this system, and great acuteness of reasoning employed in the support of it; but there are at present few who do not perceive its inconsistency with facts, and the discrepancy of its own components. The principles on which it is founded are altogether at variance with those of sound philosophy; for not content with a slow but steady advance in the process of induction, raised upon the groundwork of extensive and faithful observation, the creative imagination of the author called up, like the genius in the enchanted tale, that magnificent but unsubstantial fabric, which the superior power of truth was so soon to dissipate. We have still amongst our members many who can bear witness to the enthusiastic zeal with which the Brunonian controvery was carried on in the Hall of the Medical Society. Week after week, the partizans of the opposing doctrines met to continue the discussion: and talents and eloquence often supplied the deficiency of truth. The royal road which this system professed to lay open to the highest principles of our science, was naturally agreeable to the ardent and ingenious as well as to the indolent, whilst the personal character of Dr. Brown was such as to render him a favourite among many of the students. We are at no loss to account, therefore, for the support which he thus obtained on the first promulgation of his doctrines; still less can we wonder that their palpable inconsistency should subsequently induce the calmer judgment even of his partizans to modify or discard them. You are well aware that the Brunonian principles received much greater support on the continent of Europe than in this country; and that notwithstanding the enthusiasm which they excited in the schools of Germany and Italy, a few years witnessed their abandonment by those who had at first so cordially embraced them. Perhaps it would not be difficult, however, to trace in certain pathological doctrines of the modern Italian schools, some lurking remains of this once celebrated system.

It is not my intention to dwell upon the minutiæ of the history of the Society, or to enumerate the distinguished individuals who have contributed to its support, since the fullest information on both these topics is within your reach. The most cursory examination of the list of its members must convince you that Britain has seen few men of high and deserved medical reputation during the last century, who have not risen from its ranks; and many of these have borne honourable testimony to the value of the advantages which they there enjoyed. It must be interesting also to reflect that in this Society have been frequently developed those talents which have subsequently acquired distinction for their possessors in other walks of life. We can scarcely imagine a field more adapted to the display of the classical taste and elevated imagination of Akenside, or the enthusiastic simplicity which characterised the younger days of Oliver Goldsmith. In the number of those who have been honoured with the office of President, our respect and sympathy are excited by the name of the unfortunate Emmett, whose splendid talents were misguided by an erroneous judgment; whilst we give our unalloyed tribute of admiration to the memory of one whose fervid eloquence and mighty intellect so long fixed upon him the attention of his countrymen of every shade of political opinion. Need I mention Sir James Mackintosh?

There is one point of view, Gentlemen, in which some may conceive that the Medical Society has failed in rendering that service to science which its station and capacity would seem to demand from it. All attempts at the regular publication of any of the valuable essays and communications which are constantly being submitted to it, have hitherto proved unsuccessful; not so much, it may be apprehended, on account of deficiency in excellent materials, or from the want of external support, as from the constitution of the Society itself, the perpetual changes taking place in its management, and the close occupation which usually engrosses the time of its most active members. But the world has not been deprived of the benefit of these valuable contributions to medical literature. Many of them have at once been brought into notice through the medium of our periodicals; others, subsequently presented to the world in a more extended form, have contributed alike to the spread of knowledge, and to advance the reputation of their authors, as well as that of the Society from which they originated. The crude and unripened fruits of early mental vigour must be supplied with the nourishing juices of additional information, and mellowed by the calmer judgment

of riper years, before they can be acceptable to the correct and refined taste. And I do not therefore hesitate to say that the stimulus which has here been given to courses of investigation and trains of reflection, whose matured results have been ultimately laid before the scientific world, has been more beneficial than the publication of cumbrous volumes of Transactions, little read, and less appreciated. The only difficulty which I have in producing illustrations confirmatory of this opinion, is the selection of examples. It is probably not generally known that it was in the Medical Society that Dr. Crawford first promulgated his beautiful theory of animal heat, whose ingenuity none can deny, although the soundness of its premises may fairly be questioned; it has been characterised by the learned and philosophic Bostock as "one of the most interesting and beautiful specimens of the application of chemical and physical reasoning to the animal economy that had ever been presented to the world." Here, too, was commenced by the eminent author I have just quoted, that career of physiological inquiry and experimental research, by which he has earned a high and deserved reputation. The favourable reception of the dissertation read by Dr. Currie, on the effect of cold on the living animal body, must have prepared the way for those extended investigations, the publication of which ultimately led to a more correct appreciation of the therapeutic value of this agent. It was to this Society that Dr. Bateman presented his first essay in that branch of inquiry to which he afterwards so successfully devoted himself. It was here, too, that Dr. Henry exhibited his early attachment to the science of which he subsequently became so bright an ornament; and here also were commenced the beautiful researches of De la Rive on some of the nicest questions regarding Caloric and Magnetism. To the members of this Society were first communicated the result of those profound investigations into the physical history of mankind, which have given an European reputation to the name of Prichard. In our hall did the sagacity of Dr. Kay demonstrate the erroneous nature of the opinions of Bichât on the subject of asphyxia, and propound a theory deduced immediately from experiment, which is now received by our ablest physiologists; and there also took its rise the series of investigations into the atmospheric changes produced by animal and vegetable respiration, which have raised the name of Ellis to a high rank among the original inquirers in this department of science. These works, Gentlemen, are our Transactions; and what Society can boast of having more effectually contributed to the advancement of medical science? It would be easy for me to extend this catalogue by the introduction of the names and works of other authors of no less eminence; but one example more shall suffice. It cannot be regarded as a fact devoid of interest in the history of the Society, that in the dissertations of Professor Jameson are to be found the earliest display of those talents which have been so successfully devoted to the advancement of a science whose gigantic strides and comprehensive grasp are constantly opening new fields of experimental inquiry, and affording new topics for philosophic speculation.

Hitherto I have alluded only to the information with which the records of the Society have furnished me on this subject; had I the means of more extensive inquiry, I might perhaps have been able to mention other works of high and durable reputation as having taken their origin in discussions of which no other memorial remains. It is enough, however, that I can state with certainty that the lectures of Dr. Thomson on Inflammation, and the work of Dr. Wilson Philip on the Phlegmasiæ, are among the results of debates in which the principal share was taken by these two individuals, whose well earned reputation places them above any eulogy of mine. It must not be forgotten also, that the Elementa Medicinæ of Dr. Brown were published whilst their author occupied, for the third time, the chair of the Medical Society.

By another proceeding, not generally known, has our Society contributed largely to the advancement of medical science; and I beg to call your attention specially to this part of its comprehensive scheme, both as one which may, I conceive, be advantageously revived at the present time, and as having anticipated by nearly fifty years, the corresponding plan which forms so prominent a feature of the British Scientific Association. I refer to the appointment of annual committees for the prosecution of interesting inquiries at the common expense, which took place in the year 1784, when the rapid progress of Pneumatic chemistry was opening the way to so many novel and important branches of investigation. In

accordance with the directions given by the Society for this object, we find, as might be expected, that the subjects of respiration and animal heat were among the first on which experiments were commenced; and by these were elicited the valuable contributions of Dr. Goodwyn to this branch of physiology, which were presented to the Society in the year 1786. The splendid discoveries of Galvani and Volta, which followed at so close an interval those of Priestley, Black, Cavendish and Scheele, were not neglected by the members of our Society. Many, I have no doubt, who are now present, can bear their testimony to the enthusiasm with which they were hailed. Not content with their passive reception, the Society provided the means of confirming and extending them; and by recommending the subject to the attention of its members, gave rise to the valuable original experiments of Dr. Richard Fowler, now of Salisbury,) in which he was assisted by Dr. Thompson. It also attracted the notice of the scientific world, by proposing the nature of the galvanic influence as the subject of a prize essay, the competition for which was completely unrestricted; and it is an evidence of the publicity which its proceedings had acquired, that the premium, a gold medal of the value of twenty guineas, was awarded to the elaborate dissertation of Professor Crêve of Mentz. It is not a little remarkable that on the list of the apparatus committee at this period, we find the names of Marcet, Henry, Birkbeck, and Roget among the foremost, followed by those of Bostock, Paris, Davy, and Fyfe. It can scarcely be doubted that the taste for scientific inquiry was here fostered, if not originally developed, which has led to the subsequent eminence of these distinguished men.

Of the present state of the Society, it scarcely becomes me to speak. The number of my fellow-members whom I now address is a convincing proof of its prosperity; and its continued usefulness is fully demonstrated by the rank which not a few of them hold among the aspirants after professional distinction. It may be that our discussions are not now carried on with the same enthusiasm which formerly characterised them; but let not this be imputed to any deficiency of zeal on the part of our members, since it is the necessary consequence of the improvements which have been effected in the philosophy of our science. The strict rules of inductive reasoning have taken the place of the ingenious speculations and brilliant theories of former times; and it is now perceived that the collection and comparison of facts is a more worthy exercise of philosophical skill than the conception of a magnificent but unstable hypothesis. Instead of attempting to construct a showy frabric out of the scattered ruins of some former systems, the pupils of the truly eclectic school of medicine are content to advance with less rapid progress. Their foundation is laid on the sure basis of practical experience, and their materials are derived from every source which the pursuit of truth lays open to them; but carefully keeping in view that every science is nothing more than an expression or arrangement of facts, they exclude every hypothesis which is not the result of induction, and each general statement which is not borne out by observation. Hence, whilst every one is enabled to take an honourable station in the republic of science, none can claim the right of universal domination. The light of true philosophy no longer emanates with dazzling brilliancy from a single luminary, but diffused over countless multitudes of reflecting objects, shines with softer though not less certain lustre on her votaries.

If any tangible proof were wanting that the commencement of our second century of existence is not a period of superannuated dotage, but of youthful vigour and activity, it is afforded by the undertaking of which the present session has witnessed the completion,—the Catalogue Raisonné of our library. To the gentlemen whose united labours have brought this enterprise to a successful conclusion, so eloquent a tribute of praise has already been paid, that any addition from me would be superfluous. I am sure that you will agree with me, however, that a more convincing evidence of the prosperity of the Society need scarcely be sought for, than the fact, that its library, amounting to more than 12,000 volumes, should be regarded as sufficiently complete to render a classified index of its contents a valuable bibliography, not merely to those who have access to it, but to the profession at large; that amongst its members, a sufficient number could be found, uniting talents of no common order, with persevering industry sufficient to execute a task of such magnitude and difficulty; and that immediately upon the completion of the work, it could allot upwards of a hundred

pounds to defray the expense of the publication, without the slightest inconvenience to its funds.

It may be thought that I have dwelt so long on the historical part of my subject, that I have little time to expatiate on the advantages which our Society confers upon its individual members. I shall be sorry, however, if these do not appear evident from the details into which I have already entered. If in past times an ardent thirst after knowledge, a generous emulation in its acquirement, a steadfast pursuit of truth, a clear and unprejudiced judgment, were cherished in the breasts of the illustrious men who have shared our Association, by the opportunities of mental cultivation which they there enjoyed, and of which they have shown the abundant fruits,—can we believe that these ennobling influences are no longer exerted—that from the increased fertility of the soil has resulted any diminution of its products.

Gentlemen, let the memory of the energetic spirits, who, with Promethean skill, united the scattered elements into this giant frame, and animated it with living fire, not be without its effect this day, in stimulating us to carry on their noble purposes with renewed vigour. Their period of exertion has passed, and we have entered into their labours. But though dead they yet speak to us, in the dauntless courage with which they opposed the prejudices of the times, and the unwearied energy by which they succeeded in dispelling them. They speak to us in the noble reputation they have acquired for our institution, and which we are bound by the most sacred ties to maintain. They speak to us in the ardent zeal of their pursuit of truth, which they call upon us to imitate. They speak to us in the individual celebrity which they acquired, and encourage us to similar attainments. And could their spirits be with us this day, to witness the glorious results of their exertions, they would join with us in the earnest desire that the Society which they founded, and which now depend on us for its support, may still be the first in usefulness, as it was the earliest in formation; that as long as Medical Science shall continue to advance, and the pains of suffering humanity be assuaged by the healing art, so long it may persevere in its brilliant course, with undiminished lustre; and that many centenary gatherings of its members may unite, as we now do, in the fervent wish, —Esto Perpetua.

AN ESSAY

ON THE ORIGIN AND NATURE OF

TUBERCULOUS

AND

CANCEROUS DISEASES.

(Continued from p. 53, No. 2.)

READ TO THE MEDICAL SECTION OF THE BRITISH ASSOCIATION, ON THE 23RD OF AUGUST, 1836, BY RICHARD CARMICHAEL, M. R. I. A., CORRESPONDING MEMBER OF THE ROYAL ACADEMY OF MEDICINE OF FRANCE, ETC. ETC., AND CONSULTING SURGEON OF THE RICHMOND SURGICAL HOSPITAL, ETC. ETC.

The experiments of Doctors Jenner and Baron strongly support the doctrine of the parasitic nature of tubercle. These pathologists seem, however, to be of opinion, that independent life can only be attached, in the instances under consideration to a substance which at first has the vesicular or hydatid form. In this I differ from them, as I have already sufficiently stated my reasons for concluding that tubercles composed of a medullary parenchyma may also be endowed with individual life; and thus I extend the possession of a proper vitality to an animal mass even apparently less organized than the acephalocyste hydatid.

Doctor Farre, in his work upon Organic Diseases of the Liver, states his opinion also, that a fungous or medullary form of tubercle of that viscus was in possession of a proper vitality, and developed itself by its own innate powers. Doctor Adams, the author of the work on Morbid Poisons, long since advocated the same principle respecting carcinoma, but ascribed it to the hydatid form of existence. But as it is only *occasionally* that we observe in cancer any thing approaching the hydatid form, it is probable on this account that his opinions did not meet with that attention from medical men to which they had undoubted claims. The first edition of my work on Cancer was published in 1806, in which I avowed, without hesitation, my belief in his doctrine, differing from him, however, in this respect, that he placed the vitality in the hydatid structure, whereas, I supposed it to exist in the cartilaginous substance. In this I was manifestly wrong, as the cartilaginous portion is capable of being injected, a fact not then ascertained. But to the medullary portion I now attribute individual

life, not only because it cannot be injected, but because it resembles in structure medullary sarcoma and tuberculous formations in other parts. In the same work, as already mentioned, I afforded some striking facts to induce us to suppose that carcinoma and pulmonary tubercles belong to the same family of diseases; and I understand that the doctrine of the independent vitality of tuberculous diseases is making considerable progress amongst the physicians of Germany.

From the authority of those writers who have favoured, and even espoused the doctrine of the independent vitality of apparently disorganized masses of animal matter, amongst whom are men remarkable for high intellectual powers and deep medical research, you have *a priori* testimony that the doctrine, or if you prefer to call it so, the hypothesis, ought not to be esteemed beneath the attention of this Association; and I flatter myself that I have made out a strong case in its favour, and added some important facts and views towards its support, which will, I trust, awaken your attention to a class of diseases that, under the old established doctrines, have justly been considered as the *opprobrium medicorum*.

If my views of these diseases are correct, and founded in nature, another, but a lower link will be added to the entozoa, which, according to Cuvier, belongs to the second class of zoophites. The following species may at present be enumerated:—

1st. Tubercle of the lungs and other parts, whether commencing in the form of a grey semi-transparent vesicle, or of a whitish medullary substance.

2ndly. Masses of tuberculous matter in the abdomen, which either commence in the hydatid form or in that of medullary tubercle. These are called, by Doctor Baron, tuberculated accretions.

3rdly. Fungus medullaris and fungus hæmatodes.

4thly. Carcinoma.

Under these views, it is therefore obvious that the business of our profession is rather to point out the means by which these diseases may be prevented, than in endeavouring by vain efforts to cure them. This observation, however, demands a slight qualification. When a tuberculous disease is merely local or inconsiderable, it may admit of a cure, and the remedial measures upon which I would place most reliance, in addition to the improvement of the general habit by due attention to diet, air, and exercise, are the gradual introduction into the system of iron and iodine. The first, because it furnishes to the blood not only an ingredient necessary to red-blooded animals, but is a powerful antidote against the inroads of entozoa of every description; and the second, because it is the most powerful agent with which we are acquainted in promoting the absorption of all morbid productions. But when tuberculous formations are general and constitutional, it is irrational to expect that any human measure can prevent the fatal result. What then are the most likely means of protecting mankind from the attacks of those dreadful maladies? The answer is simple and easy. All that is required is *wholesome nourishment, pure air, temperance, and exercise.*

Amongst the lower order of society, those employed in sedentary occupations in crowded manufacturing towns, are by many degrees more prone to them than those who, living by agriculture, labour in the open air, and are not obliged to breathe the impure atmosphere of crowded cities. The former, besides, being prevented by sedentary occupations from taking that wholesome degree of exercise in the open air necessary for the due enjoyment of health, constantly commit great errors in diet, and to these combined causes we may justly attribute their greater liability to tuberculous diseases than their more fortunate fellows whose occupations are in the open country.

The comparative exemption of those who follow agricultural pursuits is, no doubt, owing to their simple and restricted diet, coupled with habits of laborious or active exercise, which occasions a rapid expenditure of the materials of the body, and an immediate demand for more, owing to the acuteness of the sensation of hunger. The high state of activity of their digestive organs at the same time enables them to supply a healthy chyme to replace the exhausted materials, provided that their nourishment be wholesome. The consequence is, that the entire frame is in the most healthy state, every organ performs with energy its allotted function, for every portion of the body is endued with its due portion of vitality. No accumulation of half animalyzed particles is found in the system fitted to afford a nidus for the growth of parasitic fungi, such as we may presume to occur in the bodies of the indolent, the voluptuous, and the intem-

perate, who gorge their stomachs to excess with a variety of the most nutritious diet, without possessing the powers to digest it.

But multitudes, it will be urged, come into the world with the very seeds of tuberculous disease so deeply sown in their constitutions, that without any fault of their own, those maladies make their appearance immediately after birth, and even in many instances before it. This is true; but it is equally true, that this apparent injustice of Providence is manifestly the natural and inevitable punishment of a breach of the organic and moral laws committed by their parents; who, in despite of disease, of feebleness, of the exhaustion attendant upon old age, and of the deterioration of progeny consequent upon close relationship, without compunction marry, and produce a puny, wretched, and diseased offspring, whose organs are incapable of performing their allotted functions.

The punishment inflicted thus upon the children, and reflected back again upon the parents in anxiety and sorrow, explains and justifies that apparently harsh, but natural and necessary law, that "the sins of the parents are visited upon the children, even to the third and fourth generation." Then, fortunately, perhaps, a degenerated race may cease to possess the power of propagating its kind.

POSTSCRIPT.

On reading the foregoing paper, which, although it occupied one hour and a half, was listened to with the most flattering attention, the President, Doctor Roget, gave his opinion, that notwithstanding other papers were nominated for a hearing on that day, yet as the subject of the one just read opened a very wide field for discussion, the remainder of the day would be more advantageously occupied in its consideration. Upon which, Doctor Macartney, Professor of Anatomy of Trinity College, Dublin, made, as well as I can recollect, the following objections.

1st. That the vesicular or hydatid-like appearance of tubercles is owing to the circumstance, that they are penetrated by the air cells or bronchial tubes of the lungs, and, therefore, cannot be considered hydatids.

2ndly. That tubercles can be injected, and that he himself had succeeded in injecting them.

3rdly. That the substance of tubercles could be taken up by the absorbents; from which it is obvious that they are not living bodies, for the absorbents of one animal have not the power of absorbing any portion of the living substance of another.

4thly. That the offensiveness of the breath of a consumptive patient militated against the principle I advocated respecting the nature of tubercles.

5thly. That hemorrhage from the lungs in tubercular phthisis, when it arises from a vomica or tuberculous excavation, is owing to an inflammatory state of the vessels of the lungs, a circumstance not likely to take place on the principle I advocated.

To the first objection, I replied, that tubercles frequently arose on the pleura pulmonalis, or even on the peritoneum in the cavity of the abdomen, and that in either instance it was obvious that the vesicular appearance of tubercle to which Dr. M. alluded, could not possibly be owing to its being permeated by a bronchial tube or air cell. I added, that I did not conceive that tubercles must necessarily exhibit the hydatid or vesicular form at their commencement; on the contrary, I had expressly stated in my paper, that they as often commenced in the form of compact, solid, round, white medullary bodies.

To the second objection, I replied, that if Dr. Macartney had succeeded in injecting tubercles, he had accomplished that which no other person had been able to perform. That our countryman, Stark, was the first to announce that tubercles could not be injected, in which assertion he had been subsequently supported by the united testimony of every pathologist, foreign and domestic, who had treated on the subject. In support of this assertion I pointed to the several fine preparations of tuberculated lungs which lay on the table; in which were displayed compact, rounded, *white* tubercles, into which not a particle of injection had penetrated, while the parenchymatous substance of the lungs surrounding them was rendered perfectly vermilion with injection.

To the third objection, I replied, that the substance of tubercle, while endued with the principle of life, did not admit of being absorbed; but that when it lost this principle and became decomposed and softened, it was then liable to absorption. That the absorbents were not, however, capable of taking up the earthy particles, carbonate and phosphate of lime, which entered into the composition

of tubercle, that consequently these particles remained behind, and blending with some moist animal matter assumed the consistence and appearance of putty, or chalk and water, contained in a shrivelled cartilaginous cyst, which is the last transmutation (resembling that of hydatids) of such tubercles as do not open into a bronchial tube. The cartilaginous cyst, as I observed in my paper, being the barrier which the surrounding tissues throw up to insulate and check the progress of the increasing entozoa.

To the fourth objection, I replied, that when the tuberculous substance, in a softened and decomposed state, is exposed to the air, in consequence of ulceration of one or more of the bronchial tubes in its neighbourhood, of course it undergoes the same fermentable changes to which all dead animal matter is subject when exposed to air, heat, and moisture; and consequently that the breath becomes, as it often does in phthisis, intolerably offensive.

To the fifth objection, I replied, that there is no necessity to infer, that hemorrhage from the lungs must be occasioned by inflammation of these organs, when it does not take place from tuberculous excavations; because hemorrhage may be occasioned by the increase and growth of tubercles to so great an extent as to compress the vessels of the lungs, and impede the circulation through them, and from this cause is satisfactorily explained the frequent occurrence of hemoptysis in cases of tubercular phthisis, where no excavations have been found on a post mortem examination.

Doctor O'Beirne inquired of Dr. Macartney, whether he had ever found cellular membrane in tuberculous matter, because it was generally acknowledged, that, whenever blood-vessels ramified, cellular membrane existed to connect them with the surrounding tissues. To this question Doctor Macartney replied, that he *had* found cellular membrane in tuberculous matter. On which Doctor O'Beirne observed, that Doctor Macartney's experience was contrary to that of Doctor O'Beirne, and he believed of all other pathologists.

The only other objection that was urged against the parasitical nature of tubercles was by Dr. Houston; who said, that as I alluded to the post mortem appearances of an axis deer, which he had communicated to the Association at a former meeting, he was induced to state his dissent from my conclusion, that because the animal had hydatids in its abdomen and tubercles in its lungs, I had reason to infer that the latter, like the former, were parasitic beings; that he, on the contrary, considered the tubercles, in this animal, to be the consequence of inflammation. To this observation I merely replied, that I placed more reliance on his facts than on his opinions, and that I would leave others to judge whether his or mine on this point, as detailed in p. 44) were most to be relied upon.

Doctor Symonds then objected to the manner in which the views of Doctor Carswell, Clarke, and others had been strted, respecting the identity of scrofula and tuberculous disease, and denied that they supported this identity.

To this objection, I merely replied by referring to the passages from their respective works, as quoted in pp. 9 and 10 of this paper, which prove decidedly that I had not dealt unfairly with them, or misrepresented their opinions.

PROCEEDINGS

AT THE

EIGHTEENTH ANNIVERSARY MEETING OF

THE

HUNTERIAN SOCIETY.

REPORT,

PRESENTED BY THE COUNCIL TO THE EIGHTEENTH ANNIVERSARY MEETING OF THE HUNTERIAN SOCIETY, HELD AT NO. 4, BLOMFIELD-STREET, FEBRUARY 8, 1837.

(Continued from p. 13. No. 1.)

Ascites, or Peritonitis in a new-born infant,—a large tumour appeared a day or two after birth at the scrotum, and enlarged the abdominal cavity, till life was threatened. Twenty-seven ounces of dark glutinous fluid were removed by means of a trochar and canula with relief. In a few days, however, the fluid having again secreted, death ensued: the peritoneal cavity was lined with lymph, and the intestines were glued together by flaky serum.

The different modes of curing *hydrocele* have been considered in connexion with the occurrence of suppuration after injecting the tunic, which suppuration did not hinder a perfect cure of the disease; though instances were adduced of its re-

turn after a similar occurrence. The efficiency of acupuncture to cure hydrocele was supported by arguments and successful cases.

Respiratory Organs.—A man having cut his throat, so as to detach the epiglottis from the base of the tongue, death rapidly followed, in consequence of the lungs becoming filled with blood from the wounded vessels in the neck. From this fact interesting points in physiology and pathology arose; as it proves, with other similar facts adverted to by members, that the arytenoid muscles, though perfect, could not prevent the influx of blood into the trachæa; and further as it bears on the subject of asphyxia, particularly as to the mode of death from exposure to carbonic acid gas. It was agreed that in all cases of cut-throat, the wound should be left to granulate, without being sewn up, and that nourishment should be steadily given, as patients almost uniformly die from suffocation or from the indisposition of the wound to heal; or at length from gangrenous inflammation occurring in the lungs or other organs.

A discussion followed on the propriety of *tracheotomy* in chronic laryngitis, for there is great difficulty in distinguishing minutely the different forms of laryngeal disease, and of fixing the precise time when the operation is needed, and will not prove fruitless from ulceration or phthisis having already proceeded to an incurable extent. In this class of cases, connected as they usually are with phthisis pulmonalis, success has seldom followed tracheotomy. But when acute laryngitis has become chronic, urgent symptoms may demand the operation, which has proved successful when undertaken before ulceration can have been established in the larynx. In croup, where the tube is half closed by fibrin, tracheotomy has often succeeded in the hands of members of the Society; but the success of the operation depends on entirely different grounds from those resulting from ulcerative inflammation of the Larynx.

Abdominal Diseases.—In the report of last year a case was recorded of very large liver in a pregnant woman. She recovered; but in December 1836, an aperture formed near the navel, from which two gallons of fluid, with a large hydatid, which had contained it, escaped. Blood soon gushed forth, and the patient in consequence died. The hydatid had formed in the substance of the liver, surrouuded by a fibrinous cyst; the hemorrhage was caused by the bursting of a large vein of the liver.

Hernia.—The early or delayed application of trusses, &c. in the treatment of congenital hernia in infants was discussed; and although high surgical authority has been adduced to favour a contrary mode, yet it appeared a general opinion that the practice of immediate pressure in these cases has an advantage over that of allowing a long period of time to elapse before it is applied. The cases mentioned went to prove that hernæa have been radically cured long before the expiration of the period when it has been thought by eminent surgeons advisable to commence the application of trusses. Pyramidal plasters were preferred to balls of ivory, &c. in the treatment of umbilical hernia in children.

Irreducible Hernia.—A case of this kind occurred in a female aged 63, it having commenced twenty-eight years before, during her confinement with twins. Inefficient bandages and trusses were employed, and the umbilical tumour became as large as a child's head. Fourteen years after the accident occurred, constipation of the bowels produced inflammation in the sac. An operation was performed which probably liberated the bowel, as relief was speedily given. The hernia was then and has since been irreducible, and if partly returned caused severe dragging pain, till the bowels were again in the sac. In February last pain attacked the abdomen, and became acute in three days; the bowels were inert. On March 1st there were constant bilious vomitings, a moist tongue, frequent feeble pulse, and the sac was rather tender, larger than a man's head, and tense. She died March 3rd, at three o'clock.

Examination.—The peritoneum was slightly inflamed—the blood-vessels supplying the muscular and mucous coats of the intestines extremely congested; dark coloured serum was in the peritoneum. The opening into the sac was large, it contained the ileum, cæcum, and a part of the ascending colon, which exhibited decisive marks of old inflammation in their attachment, by long and very firm membranous bands, to the lining of the peritoneal sac, so that its contents could only be partially returned.

Two other cases of irreducible hernia were detailed, where operations proved unsuccessful. The first in a man with scrotal hernia of ten years' standing, as large as a bullock's bladder, and which

had been irreducible for three years. An accident caused great pain and increase of the tumour. Severe symptoms threatened life,—the operation was undertaken, and the sac was opened, as a division of the stricture had been otherwise ineffectually attempted. The incarcerated intestine was vascular, rough, and adherent by old bands to the lower part of the sac,—these bands were divided, but other adhesions were exposed too numerous to be prudently divided. The wound was therefore closed; the man died the next day from acute peritonitis extending from the sac. Recently effused lymph was found to cover the intestines and peritoneum. The sac contained the sigmoid flexure of the colon, and part of the jejunum adhering to it, by recent and old adhesions.

The other case was one of very large scrotal hernia in a man aged forty years. The hernia had existed twenty-four years, and he had never worn a truss; the tumour was as large as an orange. The operation was deemed necessary, and liberation of the intestine attempted without opening the sac; it was necessary, however, to do so, and the stricture was freely divided, but the intestine still remained incarcerated, and firmly adherent by several bands to the sides of the sac.

Examination.—The bowels were inflamed, and the omentum dragged down to the sac; the communication between which and the abdomen was free. The sac contained the ileum, cæcum, and five inches of the colon, all united by recently effused lymph. The omentum was attached by very firm and old adhesions.

General inferences from these and other cases of irreducible hernia suggested some interesting points for investigation. Among these may be mentioned the causes of the inflammation, rendering reduction impracticable, as it is propagated from the abdomen to the *sac*, and the consequently appropriate treatment; and whether if an operation be performed at all, it should be performed with or without opening the hernial sac; and if extensive chronic and irremoveable adhesions exist, whether it may not be prudent at once to relieve the impeded peristalic action of the intestine, by making an incision into it.

Sphacelated Femoral Hernia relieved by dividing the stricture *only*. A lady Æt. 45, had a femoral hernia as large as an orange: symptoms of strangulation came on, but she could not be prevailed on to submit to an operation, in order to their relief, until the fifth day. At that time the pulse was flagging, the tumour numbed, and the tongue furred. The omentum, as well as three-fourths of the calibre of the strangulated jejunum, was found gangrenous. For this reason, and as fæces had been abundantly discharged by vomiting, the stricture was divided, and the bowel, contrary to the practice usually prescribed under such circumstances, left uncut; in the expectation that when the fæces should be propelled downward, the sphacelated part would give way to them. This took place the next day. Suppuration was established, and with far less constitutional irritation than when even dead bowel is divided by the knife. In six weeks the wound healed finally, and the fæces took their natural course.

Four other instances of success, in similar cases, shewed the advantage of the plan over others in connexion with which death usually follows. Moreover it was argued, that by thus employing the knife very sparingly, adhesions, which shut in the gangrenous intestine from the peritoneal cavity, were not disturbed, but were more firm and numerous.

Obstetric Surgery.—At the close of the Report for 1836, an instance was given of *Prolapsus Uteri* being much benefited by removing portions of the vagina, so as to cause its contraction. In fact, the female was thought to have "entirely recovered." The operator has, however, informed the Society, that the dragging down of the bladder, under which this patient had long laboured, had returned, causing also a *prolapsus vaginæ et uteri*. The neck of the uterus was evidently much elongated; so that the fundus uteri was unsupported by the contracted vagina. Several instances were presented of *elongated cervix uteri*, from the counter pressure of abdominal tumours forcing upwards the fundus, while the retracting action of the bladder weighed down the uterus. The combination of the two complaints would, not improbably, preclude the success of an operation for the prolapsus uteri alone.

Elongation of the neck of the uterus has been reported in a pregnant female to such an extent, that the os uteri protruded beyond the vagina, and the fœtus was supposed to be extra uterine. Premature labour took place; the woman died, and the nature of the case was made clear by the inspection of an ordinary uterus, with a very long neck.

A healthy young woman, regular in-

menstruation, became pregnant. On the accession of labor pains, no os uteri could be discovered. She had never suffered pain but had been the subject of leucorrhœa during her pregnancy. In the usual situation of the os uteri, a small indentation was felt; which, after thirty hours ineffective pains, was divided by a bistoury. The opening thus made gave exit to the liquor amnii, and when the head presented, was lacerated by its pressure, till it was capable of permitting the passage of the child. Severe collapse ensued, but she recovered. A month afterwards, careful examination indicated a short vagina, a small uterus without any distinct cervix, and at the end of the vagina, an aperture with three cicatrices, evidently caused by the wound made to aid her labour. About the same time catamenia appeared.

Miscellaneous subjects.—Vaccination. A person was vaccinated with virus obtained directly from a cow. None of the general or local symptoms in the progress of the disease, differed from those in which the vaccine virus has been transmitted through very many individuals.

Veratine.—The influence of veratine ointment in delaying pain was noticed, as beneficial in tic douloureux and local rheumatism. In a painful affection of the spine, the vesication produced by applying the ointment was so advantageous, that the patient from being unable to walk a quarter of a mile, could with comparative ease, walk a mile an half.

Bark.—The influence of the various preparations on neuralgic affections may be stated as depending less on the specific form or properties of the different preparations, than on the discrimination displayed in the employment of the medicines, but the ordinary forms are in the majority of cases, efficacious and most certain.

In concluding this brief sketch of the transactions of this Society during the past session, it is satisfactory to remember that the meetings have been once and again occupied upon the late very prevalent and fatal epidemic. But the facts elicited on those occasions are not now recorded, because the Council have the further gratification of issuing the following queries respecting the Influenza, to which they earnestly entreat exact and well ascertained replies.

It is believed that not only will a more accurate record of that disease be obtained from the documents thus transmitted from the members and corresponding members, than could be produced by unassociated individuals; but also that the Society will thus essentially serve the profession, by analysing the causes and results, in recovery or death, (if the latter describing also the age,) as well as the most successful methods of treatment. The misfortune in medical as in other sciences is, that facts have rarely been sought after by minds unbiassed by preconceived theories, and as seldom have they been fairly recorded. Thus practitioners are influenced more by very general and often imperfectly established principles than they are by precise observations well reasoned upon.

The Council respectfully offer the following questions, upon the disease commonly called Influenza:

1. To what extent has the disease been prevalent within your circle and vicinity, dating its commencement, height, and termination?
2. Was there any thing remarkable as to the health of the population, or the healthfulness of animals, immediately prior to the visitation in question?
3. What character has it usually assumed?
4. What have been the most frequent departures from the more common character; if eruptive, what their form?
5. What have been the termination and sequel of the disease?
6. What treatment was found most successful? And if you had opportunities of witnessing prejudicial results from any modes of treatment, have the goodness to detail them.
7. In the event of your having met with fatal cases, under what circumstances did death occur; and if there were post mortem examinations, what were the morbid appearances?
8. If there are means of knowing, will you have the goodness to say what was the proportion of deaths to the population?

Dr. BRIGHT'S CASE OF A TUMOUR SITUATED AT THE BASIS OF THE BRAIN, &c.

(From Guy's Hospital Reports.)

It has occurred to me, within a few years, to witness the symptoms, and, to a certain extent, to watch the progress of two cases, in each of which a tumour had

developed itself within the cranium, nearly at the same point; and in which there has been so great a resemblance in the symptoms, as to confirm the feeling which I always entertain, and wish to enforce, that in disease, as in other matters, there is a fixed relation, which it is possible we may discover, between cause and effect; a belief which is indeed essential, in order to render our investigation on the subject of diagnosis satisfactory and interesting. Of course various circumstances always exist which serve to modify, or form a part of the cause on which certain effects or symptoms depend: and hence arises that difficulty which has induced some almost to doubt the possibility of forming any other than a general and indefinite diagnosis in many diseases, particularly those in which the nervous system is implicated. The only way to overcome this acknowledged difficulty, as regards disease connected with organic change, is, to increase the number of authentic cases, in which symptoms and morbid appearances are faithfully detailed.

In each of the following cases, a tumour has been found just beneath the tentorium, in contact with, or actually attached to, the petrous portion of the temporal bone, and pressing aside the pous Varolii. This is a part which seems peculiarly liable to injury, owing to the delicate structures in the neighbourhood, and to the proximity of the internal organ of the ear: besides which, the weight of the head is concentrated near this part, so that fractures of the basis not unfrequently pass directly through the portion of the bone which bounds this region of the brain; and when a less degree of violence is done to the parts, it is still probable that the groundwork may be laid for such organic changes as will be exhibited in the two cases which I am about to detail.

CASE I.

In November, 1831, I was sent for to Woolwich, to see an officer, a tall athletic man, aged 48, who, after being many years in active foreign service, had returned home in 1817. He married in 1825, and had a family. In 1826 he suffered severely from sciatica of the right hip, which he had injured some years before by a fall from his horse. This was cured by carbonate of iron; and he afterwards enjoyed an excellent state of health, till the autumn of 1829, when, being again engaged in foreign service, he began to experience an attack of periodic pain over the left eye, exactly in the superorbitar notch. This pain used to return about dinner-time daily; and was always put a stop to before he had half finished his meal. At this time he met with a very severe accident; and was taken up stunned and senseless. He was bled; and after some hours recovered; but his recollection was, for a day or two, so defective, that he frequently asked what service they were engaged in, and what they were doing; and it was with great difficulty these points could be explained to him. However in a short time he was tolerably restored; though he never regained the state of health he had enjoyed before his fall, frequently complaining of pains in his head, and of some weakness in his right leg.

About Christmas he had a severe attack of bilious vomiting; after which, the pains in his head and over his right eye were worse, and more frequent; and he experienced, occasionally, a temporary loss of sight, coming over him like a cloud, and lasting for some minutes; then passing off, and not being followed by any remarkable increase of the headache. After some weeks of suffering, the intermittent pain over the left eye was completely removed in a single day, by taking three doses of sulphate of quinine in rapid succession two or three hours before the expected diurnal attack; and is never afterwards returned. In June, 1830, he had another attack of bilious vomiting, of great severity; which however passed off so quickly, that the following day he was able to resume all his duties; but shortly afterwards he discovered one morning that the sight of the left eye was completely gone. The sight of the right eye also became imperfect; the weakness of the right leg increased; and the left leg also began to lose power. In 1831, when he returned home, the sight of one eye was entirely lost; and with the other, it was only by great effort, and by changing the field of vision often, that he could distinguish the features of any one with whom he conversed. The hearing of the right ear was tolerably perfect; but he had for many years lost the hearing of the left, from the shock of a gun firing. He likewise complained much of pain darting through his head; which was relieved by cupping, blistering, and tartaremetic ointment.

At my first visit, on the 8th of November, 1831, I found him sitting in his chair by his fireside, with his eyes closed,

perfectly unconscious of surrounding objects; so that I conversed with those in the room just as if he had not been present. His wife made him understand, by speaking close to his ear, that Dr. Parker, the physician who had been in constant attendance upon him, had called: and after a few words had passed between them, I was told that I might feel his pulse, or examine his eyes, or do what I pleased, as he would suppose it was only the friend to whom he was accustomed: nor had he the slightest knowledge of my having been present, although I remained with him for nearly an hour, during which an incessant conversation was going on. When after much trouble, by writing words on his hand, by calling in his ear, and by other means, he was led to comprehend, he answered distinctly, and without hesitation, but in the high-raised and ill-modulated voice which is usually observed in deaf people. His intellect seemed unimpaired. He was able to stand; but partly from the weakness of his lower extremities, and still more from the timidity arising from his blindness, he could not move without support; and when he attempted to walk, it was with a short, feeble, tottering step. He had no incontinence of urine, although that had occasionally appeared some weeks before: he had never passed his fæces unconsciously, but once or twice there had scarcely been time to prevent an accident of that kind. His sleep was tranquil, and not too heavy; nor did he appear more drowsy than might be expected in a person deprived of sight and hearing. His appetite was good, and had sometimes been excessive. I learnt that about a week before he had experienced a fit, in which he had been for a time insensible, and his countenance suffused, but without convulsion. There was a certain inequality and irregularity in his power of hearing, so that at times he could catch sounds even slight, but not with sufficient distinctness to connect meanings with the words; nor could he be made to understand, even by the loudest voice.

There was no room to doubt that organic mischief was established within the skull: and all I recommended was, medicine to regulate the action of the bowels, and a few grains of the subcarbonate of ammonia, with compound infusion of gentian: his diet to be very plain, and no wine.

November 29th, I again saw him: he seemed more alert, and could hear a little better; so that he had once or twice distinguished that the drum or bugle was sounding, and heard the voices of his children: and although it was a very laborious operation, yet it was possible to make him hear certain words; and, by the occasional assistance of tracing on his hand words which no effort could make him hear, he was led to comprehend whole sentences; and he then answered correctly, and seemed fully aware of every thing. In this way his wife, who attended him with the most indefatigable care, was able to keep him informed of all that was going on; reading to him the newspapers, in some of the contents of which, particularly as referring to the cholera, then raging at Sunderland, he took great interest. He had sometimes spoken of a very peculiar sensation in his head, attended with a sound as if grease had been thrown into the fire, making a whiring noise, and then dying away, whilst at the same time a flash of light passed over his eyes. With regard to his sight, that also had experienced some occasional improvement; so that the day before our visit, he had said that he could see his whole hand. He was likewise strong on his legs; for with support he could walk three quarters of a mile. His pulse varied from 70 to 75: his appetite was good, and his sleep calm: his bowels easily acted on by medicine. He was ordered to continue his present remedies as long as they seemed to agree, and afterwards to make trial of the arsenical solution; and to begin at once with a succession of blisters at the nape of the neck and behind his ears. A short time after a seton was introduced into the nape of his neck.

I afterwards received occasional reports, by which I learnt that the symptoms gradually increased; the sight and hearing becoming, if possible, worse; the paralysis of the lower extremities more confirmed; the bladder and rectum less under controul; and the mental faculties weakened. I had not, however, an opportunity of seeing him again till the 14th of November, 1832, nearly a year having elapsed since my last visit. He was now lying on his bed, greatly emaciated, propped up by pillows, with his eyes closed, his hands under the bed clothes, and his knees bent up. His wife was feeding him with meat, finely minced, and mixed with potatoes: she was obliged to rouse him frequently, to make him take his food; and then he continued to open and close his teeth gently till he fell

asleep, while the meat still remained partly in his mouth. He had no difficulty or choking in deglutition; but for some months he had not seemed to prefer one article of food to another: and he sipped the most nauseous medicine with as much apparent unconcern as he did wine or any pleasant beverage. I understood that he was subject to some changes, and particularly to more or less drowsy days; and this was one of his bad days. About a month before, he had signified some dislike to medicine, which was considered a sign of improvement; but it soon passed away again; and he now seemed not sensible of any difference in the taste of what was put into his mouth. He was quite unconscious of the presence of strangers, and of all that was going on around him. He seemed in a sort of slumber, except when he moved his mouth to eat, or expressed pain, which he did by drawing up his features when the dressings were removed from his foot, upon which two or three oval ulcers have taken place. I learnt that he was generally taken up about one o'clock, and used to sit in his chair till seven o'clock, when he was again put into bed; but he had lost all power of standing; and although he was perhaps conscious of the calls of nature, he gave no intimation of his wants. He occasionally expressed distinctly severe head ache, and a pain over the right eye. I doubt whether the pupils acted at all: the right was rather the larger of the two. He was never observed to be convulsed. Latterly, a few blisters had been applied to the vertex; but it was quite obvious that no relief could be afforded him.

From this time till his death, which happened on the 27th of December, I did not see him; but I heard that his helplessness had become more and more complete; that he was subject to frequent most profuse perspirations; that the fæces and urine often passed unconsciously at the very moment he was taking food; and that the sloughs which were for some time forming upon his sacrum had grown rapidly worse. I witnessed the examination, which took place two days after death, in the presence of Mr. Harris, Mr. Bossy, and his brother, and one or two other medical men.

Sectio Cadaveris.—The scalp rather more bloodless than usual. The skull was hard and solid, and somewhat uneven in its thickness: on each side of the sagital suture internally, but particularly on the left, it had small deep irregular cavities, which had been filled with corresponding unusually enlarged glandulæ Pacchioni, which seemed to have perforated the skull in some parts, so that only the external table remained. The dura mater was not very vascular, but the projection of the glandular bodies on each side of the longitudinal sinus was remarkable; so that at first they suggested the idea of small cerebriform fungous tumours. A small bony plate also, about half an inch in length, lay along the angle of the falx. The longitudinal sinus was quite natural. The dura mater adhered very firmly to the arachnoid, at those parts where the glands were so large; and when it was removed, the arachnoid in the immediate neighbourhood was white and opaque. The arachnoid was not vascular, nor unnaturally adherent to the brain. There was no serum effused beneath it. The depth between the two hemispheres of the cerebrum was small, owing to a considerable elevation of the corpus callosum. The general substance of the brain was natural, but rather deficient in bloody points.

The roof of the ventricles was raised by clear fluid, of which about four ounces were collected, both the posterior and the anterior portions of the ventricles being distended; but the accumulation appeared greatest in the anterior. A few large vessels, ramified on the internal surfaces of the ventricles, the corpora striata, and the optic thalami seemed flattened; and the septum lucidum was much thicker and firmer than natural. The choroid plexus on each side was exsanguine, and contained several vesicles, from the size of a pin's head to that of a pea. The velum interpositum was also exsanguine.

In attempting to remove the brain from the basis of the skull, it was found that the anterior portion of the cerebellum, on the left side, degenerated into a a tumour; and adhered so firmly, that it could not be detached without a scalpel, or employing considerable force, from the petrous portion of the temporal bone. The structure of this tumour was chiefly hard and unyielding, but in some parts softer; and the nervus trigeminus, or fifth nerve, was seen passing over it flattened and broad; nor did the tumour simply adhere, but the bone had become carious and pervaded by it, so that a softened cavity occupied a large portion of the petrous ridge, extending towards the sella turcica.

(To be continued.)

DR. ASHWELL'S CASE OF PREGNANCY WITH IMPERFORATE UTERUS.

Eliza P., aged 23 or 24, an Irish woman, residing at No. 105, Little Suffolk street, Southwark, a patient of Guy's Lying-in Charity, was taken in labour, with her first child, on the 14th or 15th of November, 1836. Mr. Roe, the gentleman to whom the case had been entrusted, was called to her at seven o'clock in the morning. He was informed that she had been in strong pain since the preceding evening, but there had been no show as yet. Mr. Roe observed the pains to be urgent and very powerful; but although he remained several hours with her, he had not succeeded in discovering the os uteri.

Puzzled by this novelty (for he had attended a great number of labours), he requested me to visit her. It was then two o'clock; the patient was on her bed. On examination, I found a firm, uniform, globular mass forcing down into the vagina at every pain (which was of great force) but no irregularity upon its surface could be detected; and a very careful examination of the entire vagina whose extremity was easily reached, at all points, failed in detecting the os uteri. As her bowels had been confined for two days, Mr. Roe had administered a dose of castor oil: so we waited a few hours, to see what nature would do, as well as to afford the oil time to operate.

In the evening I again met Mr. Roe to see the patient. Labour pains had persisted, and were of unusual severity: the castor oil had acted once. A most careful investigation of every part of the vagina failed to detect any os uteri. At the upper part of the canal at each pain, there was forced down this tight, tense, globular body, of the bulk of the child's head; and conveying the impression of an entire uterus without orifice.

About the spot where the os uteri should have been, was a minute portion, somewhat thinner than the surrounding parts; but the whole was uniformly smooth, and contained no break whatever. On the receding of the mass, in the absence of the pain, something like a child's head could be felt within.

Inquiries were now made, and the following facts elicited.

Mrs. P. was married on the 4th of February preceding 1836. Since the age of fourteen, she had menstruated every four weeks, sometimes every three weeks. The discharge was always pale and scanty, and continued from two to three days. She never suffered pain at those periods. She has not menstruated since her marriage.

Both before and subsequent to her marriage, she has had robust health; and in the necessary duties of her vocation has undergone an usual degree of laborious exertion, but she has not had a day's ill health.

For two or three days before labour came on she noticed a rather copious reddish discharge, that continually drained from her, but there was no pain. On the subsistence of this, about the 12th, slight pains in the back were felt, which went on till the night of the 14th, when they assumed the severe and urgent character which occasioned her to summon her medical attendant at the time already stated.

Having satisfied myself, at this second examination, that there really was no orifice into the uterus, the pains continuing of a severe character, and the existence of a living child being proved by the pulsations of the fœtal heart, which were distinctly audible, about twice as fast as the mother's pulse, I sought the advice of Dr. Ashwell.

The doctor lost little time in arriving: and having, by a more careful investigation positively confirmed the statement of the condition of parts already made, he determined on losing no more time in making an artificial opening across the above named spot, where the globular body seemed slightly thinner than elsewhere. The patient's pulse was about 120 to 130: very irritable; the pains violent; the skin irregularly hot and cold; the features anxious; the mind irritable; general restlessness; the bowels had now been twice relieved by castor oil. Accordingly, having placed her on her left side, the doctor introduced his left forefinger as a director; upon which he passed up a curved, sharp-pointed bistoury with his right hand; and having punctured the spot already fixed upon, he incised forwards towards the bladder (which was empty) and backwards towards the rectum. At this last incision, a few drachms of dark blood flowed out. The liquor amnii of course escaped; and the head fell on the artificial opening, which proved to be of an inch and a half, or perhaps nearly two inches in diameter and about a line in thickness.

The Doctor did not incise laterally, lest he should wound any of the branches

of the uterine arteries. At one o'clock A.M. of the 16th, he left the patient in charge of Mr. Roe and myself. The pains abated for a brief space after the operation, the performance of which occasioned no suffering; so that she seemed not to be conscious of any thing beyond the inconvenience of manual interference. Pains, however, recurred; but little advance of dilatation appeared to be made for some time, till about four o'clock A.M., when, under the influence of a severe pain, the edges of the orifice tore suddenly towards the right side, and soon after another rent took place, whilst my finger was at the part backwards, towards the left sacro-iliac synchondrosis. At this, she became suddenly faint; the pulse was 140 or 150 feeble; the skin cold and clammy; and she fell exhausted. Æther, ammonia, brandy, and opium were administered, and she rallied. After resting for about two hours, pains recurred gradually, and became as powerful as at any previous time.

The extent of the laceration on the right side could be reached by the finger; it had not extended to the reflection of the vagina; that on the posterior part was beyond reach. No gush of blood attended these lacerations. The head became engaged in the pelvis, and was delivered at eleven A.M.

The latter pains were very inefficient; and much stimulant was administered towards the close. With the child there was a more than usual degree of hæmorrhage; the infant, a male, was asphyxiated, and was with difficulty revived. The placenta was taken away in half an hour, and the uterus contracted well. Nothing further could now be detected, on examination, but several ragged shreds about the orifice at the top of the vagina.

The tongue was dry and brown at tip; the head ached; the pulse was 110, jerking, doubtless referrible in some degree, to the stimulants. Towards the close of the labour, the bowels had afforded three copious motions.

Liq. Opii sedativi. M. xl. statim. And, to meet the expected reaction, Haust. Efferves. cum V. Ant. Tart. et Tinct. Hyoscyami āā ℥ss 4tis horis.

Barley-water.—Quiet.

Five P.M.—Has been visited by Dr. Ashwell. Pulse 104; no tenderness; tongue moister; bowels once more opened; has voided urine twice. Since the delivery there has been a copious draining, with some clots, which has trickled along the floor, having penetrated the bed. This is principally urine; but there is evidently also a considerable quantity of blood. She has slept perhaps half an hour.—Pergat.

Eleven P.M.—Has slept an hour, and is refreshed. Free from pain; no sickness; pulse 104. Has drank largely of barley-water.

Liq. Opii ℥ss. et pergat.

17th Nov. 10 A.M.—Has slept about six hours. Pulse is only 84 soft; bowels open twice; urine free; tongue white, but moist; moderate perspiration; no tenderness. There has been slight draining, tinged with blood.

Six P.M. I was hastily summoned. She had had three motions in quick succession; and with the last there was much bearing down, followed by severe attacks of pain in the back and in front, with the expulsion of more clots. The pulse was 106, jerking: countenance rather frighted than anxious; there had been no rigour, but there was some pain on pressure over the womb.

Pulv. Opii gr. j. statim.

She was supplied with a bed-pan, with strict injunctions to maintain the recumbent posture, under all circumstances.

Eleven P.M.—Has slept at least three hours. The pain has abated; there is scarcely any on pressure; bowels quiet; pulse 96 softer.

Liq. Opii ℥ss. statim, et pergat.

18th March.—Has slept nearly all night, and is quite free from pain or tenderness; bowels open twice, but the pain prevents any discomfort; pulse 90; tongue white, moist.

Rep. Haust. Efferves. sine V. Ant. Tart et Tinc. Hyosc.

Vespere. Has been comfortable all day. Pulse about 90, soft; tongue cleaner; no pain; open once; urine free.

Pergat; et opii gr. 1. h. s.

19th.—Slept well; pulse about 100 weak; bowels open twice; no pain; discharge during the night was more profuse, with some clots of blood, but the napkins have been put away; asks for food; there is no milk, but the breasts are filling.

Haust. Efferves. cum. Tinct. Opii. m. v. 4tis. horis.

Liq. Opii. sed ℥ss. h. s.

Barley water and gruel.

Nov. 20.—This morning there is an abundant supply of milk in both breasts; the child sucks well from the right, but the left is enormously distended, and has no nipple; there is an extensive areola, with a slight central depression, and no

milk has passed from it; as yet there is no hardness, but she suffers a good deal from distension and pain; pulse 100, jerking; tongue moist, slightly white; bowels once open; no hardness on pressure over the uterus; there is a copious offensive discharge, but I have not been able to see a napkin.

Omit Medicamenta—low diet—breast-pump.

22nd Nov.—Mr. Roe used the pump yesterday, and, after much perseverance, succeeded in drawing forward a portion of the areola, and procuring a large supply of milk; since then, the breast is comfortable and smaller, and the milk oozes from it spontaneously; pulse 90; tongue clean; bowels open; sleeps well; no pain; is hungry; discharge abundant; greenish, muco-purulent, and offensive.

Improve the diet; et pergat.

24th.—Child cannot seize the right breast, but it is small, free from pain, and the milk spontaneously issues from it; discharge less in other respects; doing well.

25th.—Is doing well, and may be pronounced convalescent; enjoined to keep her bed yet for some days.

4th Dec.—On calling to-day, I find her weak, but well. Since the last report she has had some severe pain and tenderness about the pubes; for which Mr. Roe, who has been most assiduous in his attentions, applied a few leeches, and the pain quickly subsided. There is still a profuse, greenish discharge from the vagina. Is weak.

Ordered a little Quinine.

14th.—Went this morning with my friend Mr. Gaselee to institute an examination into the present state of parts. It was with difficulty that even a manual examination was permitted.

A day or two after the last reported visit, the discharge assumed a reddish character, and so continued between three and four days; it commenced, continued, and ceased like the catamenial fluid, and was not attended by any increase of symptoms. She is now nearly free from discharge, and though weak, is at the tub washing.

The following is the result of a careful investigation:—The vagina is short; its extremity and every part of it can be readily reached by the shortest fore finger; it presents no other peculiarity. There is no cervix uteri. The uterus seems reduced nearly to a normal unimpregnated size. At the extremity of the vagina, there is a puckered irregular orifice, into which the tip of the finger can enter. It is soft, with smooth and thick edges, not perfectly circular, in consequence of certain indentions, as if from drawing together of several small rents. It might be compared to the base of an apple, whilst this part of a normal uterus would better resemble the apex of a pear. Radiating from the central aperture can be distinctly felt three ridges, like lines of adhesion, one passing forwards, towards the right ilio-pubic junction, traceable nearly to the reflection of the vagina, one opposite to this backwards towards the left sacro-iliac synchondrosis, whose extremity is lost in the reflection of the vagina, and the third, of short extent, about one-third of an inch long, passing backwards and to the right These were distinctly ascertained by both Mr. Gaselee and myself, to centre in, or rather radiate from the aperture above named.

The London Medical
AND
Surgical Journal.

Saturday, April 22nd, 1837.

THE LONDON UNIVERSITY.

The appointment of a Registrar to the Metropolitan University has become a stumbling block to the progress of the new Institution, and it is with pain we have now to state that *intriguing* is busy at work by different parties, each of which is endeavouring to serve a selfish purpose, by getting the important office filled up by a *friend*, in place of selecting some well qualified individual who might have come forward, had it been thrown open to competition. We are not, however, without hope, that as the appointment will not immediately take place, some person will come forward with pretensions of a much higher order than any of the present candidates, and thus leave no excuse for controversy and *jobbing* amongst the senate. Mr. Warburton has not yet, nor is it likely that

he will, relinquish *his* favourite protegé. Certain representatives of the corruptionists, who became necessarily elected among the senate, are using all their praiseworthy endeavours, to provide for Mr. Daniell, the Chemical Professor of King's College; whilst Dr. Forbes of Chichester has met with an able advocate and place hunter in Dr. James Clark. The general impression at present is, that neither of these jobbings will succeed. The *fame* which the Inspector of Anatomy has acquired in executing the functions of his office, and the transactions that have lately taken place at the Home Office, are such as, in all probability, to induce the government not to part with so valuable a servant as Dr. James Somerville; and however well qualified Mr. Daniell may be to lecture to the empty benches of the high Churchmen's College, we have no right to suppose that such talents would render him a competent Registrar of the University. The claims and pretensions of Dr. Forbes are of an order which no one can so well appreciate as his friend Dr. James Clark, and though the mutual feelings of regard and friendship which these two individuals entertain towards each other, so fully exemplified in their works, (we allude to dedications and compliments,) may be highly praiseworthy, it is not a time for Dr. Clark to evince it, at the expense of an important national institution. Without any unkindly feeling towards Dr. Forbes, we cannot help expressing our hope, that the Senate should not make choice of a medical practitioner, more particularly of one, whose humble position in early life, must have deprived him of those advantages of early education and polished habits, which will be so very desirable for the Registrar to possess; but also, because the habits and avocations of all medical practitioners are very different from those which the duties of the office will necessarily require. An individual ought certainly to be chosen, who, in addition to the education, mannners and habits of an accomplished gentleman, has a talent for what is usually called the business of life.

CHAIR OF CHEMISTRY OF GOWER STREET.

The election of a Lecturer to the Chair of Chemistry in this School will not take place until next month. We do not despair of our friend Apjohn's success. We have already informed the public of his high pretensions.

MEDICAL EVIDENCE.

The circumstances which have taken place at the late trial, in reference to the importance of medical evidence, affords a favourable opportunity of calling attention to this most important duty of the medical profession. In doing this we cannot omit pointing out the state of medical evidence in other countries, more especially in France, and comparing the uncertain and very imperfect state of the mode, by which medical testimony is obtained in England, with the highly advanced condition of this branch of the criminal law in other countries. The importance indeed of the competence of medical witnesses has been strikingly exemplified in the case of Greenacre; for had there been any imperfection in that evidence—any incongruity or discrepitancy of medical opinion, the most convincing and incontrovertable proofs of the mode by which the deceased had met her death could not have been brought before the jury. Now it is impossible to contemplate the mode—the accidental manner by which that evidence was obtained,

without being struck with the serious imperfection of our criminal court as regards medical evidence. It must be borne in mind, that in the case of Greenacre, the medical evidence rested on the examination of individuals, who are the surgeons of the parish workhouses, and where the parts of the mutilated body happened to be found; and whilst that evidence reflects the highest credit on the medical witnesses, and met with the unqualified approbation of *both* counsel, yet it must be admitted to be a serious defect in the law of this *country*, that the proof of guilt or of innocence of an accused person, should depend on all and sundry, or on any medical practitioner who may be at hand, on the commission of an heinous crime. The evils which may arise, and—which we shudder to confess—may have arisen from the incompetency of medical witnesses, has, we trust, only to be fairly represented to the government of this country, and we cannot doubt that such representation would lead to competent individuals being chosen, from their superior acquirements in different branches of medical science, so that the legislature could, on all occasions, command their services in all cases of death where there was the slightest suspicion of crime. Indeed it is not too much to assert, that there is no public duty to fulfil which the highest knowledge in all the branches of medicine are more essentially requisite, or could be more useful to humanity, than for a country to be possessed of individuals, who can on all occasions be called forward where medical evidence is required.

THE DEATH OF DR. CUMMIN.

We regret that it is our painful duty to communicate to our readers the death of Dr. William Cummin, the joint editor of the *Medical Gazette*, who expired, after a lingering illness, on the 10th inst., from a disease of the brain. Dr. Cummin was a native of Ireland, was educated chiefly in Dublin, and was a member of the College of Physicians of that Metropolis. When Dr. Roderic M'Leod was appointed one of the Physicians to St. George's Hospital, it was thought unwise that he should continue as the sole and responsible editor of the *Medical Gazette*, and overtures then made to Dr. Cummin, who was then settled in Dublin, to accept the, no very lucrative, and we believe, to his feelings, no very eligible appointment. When we consider the duties which devolved upon him, the controversies he had to contend with, the statements he was compelled to make against the cause of truth and justice, the foul aspersions and the slanders he was stimulated to publish in the Gazette against private individuals, these humble duties, duties repulsive to an honourable mind, like Dr. Cummin's, along with the necessity of admitting into his Journal, all the contemptible puffings of its subscribers, made the paltry salary of one hundred a year, with a few perquisites, dearly earned. As a Journalist, it must be admitted, he was by no means an able, and far from an elegant writer, though the difficulties he had to contend with, as is too often the case with literary hirelings, may be deemed quite sufficient to account for the want of vigour, and colouring of truth, so palpable in his "leading articles." As a physician, his acquirements were by no means of so mean a description. The Lectures on Jurisprudence, which he has published in the Gazette, must be admitted by every one as a proof that he possessed great industry and considerable intellectual acquirements.

PROPOSED CHANGE IN CRIMINAL JURISPRUDENCE.

The Convict Greenacre.—Importance of Medical Evidence in Criminal and Civil Proceedings.

To the Right Honorable Lord John Russell, his Majesty's Principal Secretary of State for the Home Department.

My Lord,—Your avowed determination to modify and improve the criminal jurisprudence of this couutry emboldens me to address you on that most important subject in which you are engaged, and leads me to hope, that you will pardon the liberty I take in presuming to offer you a few suggestions on a matter so deeply interesting to society at large. Having for some years past, devoted great attention and reflection to all criminal as well as civil cases which require the evidence of medical practitoners, and published my opinions regarding them, I trust I may venture to direct your Lordship's attention to many points in criminal jurisprudence, which, in my humble opinion demand your most serious consideration, as well as that of the Government and legislature, and more particularly at so opportune a period as the present. The public opinion is now in favour of a more humane system of criminal jurisprudence, and for rendering it much less sanguinary than the benighted prejudices and ignorance of past ages had deemed necessary.

A recent event has almost wholly engrossed public attention, and particularly directed it to the state of our criminal law. I allude to the case of Greenacre, which is now the universal theme of conversation, and which must have attracted your Lordship's attention, as his Majesty's Chief Magistrate in Criminal Cases.

The trial of Greenacre has created a great sensation among the medical profession as well as the public, and must convince those actually engaged in the practice of medicine, of the indispensable necessity of studying medical jurisprudence, or the application of the medical sciences to the elucidation of civil and criminal proceedings in courts of justice. It is worthy of mention, that no longer than seven years since, the late Dr. Gordon Smith and myself were the only lecturers on the science in this metropolis, and that we memorialized the Apothecaries' Society to enforce its study, on account of its great importance. To the credit of the Society, I have to state, that the memorial was immediately attended to, and medical jurisprudence introduced in the Curriculum of the Court of Examiners of the Apothecaries' Society. It is painful to acknowledge that the Royal College of Surgeons has not followed such a good example, though had it not been for the surgical evidence of Mr. Birtwhistle and Mr. Girdwood at the trial of Greenacre, he could not possibly have been convicted. It is to be hoped that the College of Surgeons will now see the importance of the science which has given rise to these remarks, and henceforth enforce its study, and act in accordance with the views not only of the Society of Apothecaries, but of the whole Profession.

In the last number of the *Medical and Surgical Journal*, I gave a brief account of the state of medical jurisprudence on the Continent of Europe, which is so superior to that of this country, and mentioned, that those only who had devoted themselves to its cultivation, were admitted as witnesses in civil or criminal proceedings. The wisdom of this law has been universally admitted by the members of the bar, as well as by the best informed portion of the medical profession in all countries. In reference to the late trial, it may be stated, that some eminent barristers, not engaged in the prosecution or defence, have expressed their opinion, in conversation, both before and since the trial, that the head, body, and limbs of the murdered woman should have been subjected to the examination of a jury of the most eminent members of the medical profession, or of some individuals well acquainted with medical jurisprudence. They further urged, that it did not follow, that because the medical witnesses in this case happened to be able and scientific men, that the bulk of ordinary witnesses are all competent to elucidate such difficult cases, and that therefore, there ought to be a certain number of qualified individuals, to attend coroners' inquests, and the criminal courts, both for the prosecution and the defence of prisoners. I have long entertained this opinion, and have elsewhere defended it;* for without intending the

* Manual of Medical Jurisprudence and State Medicine. 2nd Edition, 1836. By Michael Ryan, M. D., &c. Sherwood & Co., and all Booksellers.

slightest offence to any portion of my brethren, I fearlessly reiterate my conviction, that few of the ordinary medical witnesses, most of whom have not studied medical jurisprudence, are competent to give correct evidence in a large proportion of causes in courts of justice. The force and truth of this position are daily attested by the reports of the evidence of medical witnesses published in the public papers, and numerous examples in proof of it might be quoted. This evil has been long felt, and was in a slight degree corrected many years since, by the admirable Essay of Dr. William Hunter, on "Child-murder," which is highly approved by our learned judges. But have we not known in our own day, the grossest ignorance of medical witnesses in criminal courts, which led to the conviction of innocent persons? Thus a woman was convicted of murder, and executed for the crime, for having mixed arsenic with a dumpling, the only proof of which was, that in the opinion of a medical witness, there was arsenic present, because the blade of a knife was somewhat blackened on being passed into the dumpling. This was no proof whatever of the presence of arsenic in the dumpling. Again, prisoners have been convicted of rape on children by medical testimony, and of having communicated gonorrhœa, though the accused had been free from that disease for months previous to the period of the alleged offence, and the girl had laboured under a genital discharge for five or seven years before the date of the supposed crime. Again, we have it recorded as recent medical testimony, that it is impossible to commit a rape on a girl of ten years of age, though it is notorious that hundreds of children at this tender age are prostitutes in this metropolis, and the life of a felon properly convicted is spared in consequence of such evidence.

It must be needless to multiply examples of this kind, as enough has been now urged to demonstrate the necessity of having proper and correct medical evidence, both in civil and in criminal courts of justice. This is only to be partially secured by the medical corporations enforcing the study of medico-legal questions, or by the legislature appointing certain qualified individuals, of the medical profession, to assist in the prosecution and defence of criminals. Were a law in force to this effect, prisoners would also appoint medical advocates, science and truth would efficiently cooperate, and even-handed justice would be administered for the protection of the public, and the punishment of offenders.

In a case of this kind, a delicate scrofulous girl, aged eleven years, who had a yellowish discharge from the external genital organs, prosecuted a young man, aged eighteen years, for rape. Two persons, who called themselves surgeons, swore that the capital crime had been committed, and disease communicated. Dr. Gordon Smith, Mr. Whitmore, and myself, were of a different opinion; but the man was sentenced to six months imprisonment. It was clear that he could not have communicated an infectious disease under which he did not labour; and that which was supposed to be such, had existed since the girl was five years old. Dr. G. Smith and myself forwarded affidavits to the Secretary of State for the Home Department (Sir Robert Peel), but the sentence was not disturbed. The prisoner, after the decision of the Home Secretary, declared most solemnly he had never assaulted the prosecutrix; and he was deprived of his liberty for six months, on medical evidence, for a crime he did not commit, and for a disease it was impossible for him to communicate, and which did not really exist in the accused. This case was tried at the Clerkenwell Sessions, Nov. 1829, noticed at length in a letter of mine published in the *Morning Chronicle* of that period. The scientific grounds on which the evidence for the defence rested, is fully described in my work already mentioned. Similar cases are also described by Sir Astley Cooper, in his Lectures on Surgery, in Smith's, Beck's, Paris's, and other works on Medical Jurisprudence; and I have likewise recorded many other examples.

With respect to the medical evidence against the convict Greenacre, I may observe that I was consulted by some of the medical witnesses before the trial of the accused. On a most careful consideration of the account of the morbid appearances, I concluded, in the presence of four medical gentlemen, that the injuries on the eye and back of the head were inflicted during life, that the throat was cut while the body was still warm, and most probably immediately after the infliction of the blow or blows on the eye and back of the head, before life was extinct; and that the appearances about the injured parts could only have been produced, in this case, before death, as they were, what are scientifically termed, ecchymoses, or in common language, bruises, and not cadaverous lividities, or

spots which generally appear sooner or later after death, and sometimes before life is extinct. It was also concluded that it was impossible to state with what substance or instrument the blows on the eye and head had been inflicted; nor was it necessary, in a medico-legal point of view, that the medical witnesses should go farther than to decide, whether the injuries were inflicted *before* or *after* death, and if during life, whether they were sufficient to cause death. With a view to elucidate this question, I drew up, from my lectures on the subject, a description of ecchymoses and cadaverous lividity, and transmitted it to one of the medical witnesses, who was summoned but not examined at the trial, as the testimony of Mr. Girdwood was satisfactory and conclusive. Of that evidence, as a whole, I have given the most favourable and well-merited commendation in the last number of the *Medical and Surgical Journal* (15th inst.), but there was one part of it which referred to the substance or instrument with which the blow was inflicted on the eye, which, as set forth in the public papers, was, in my opinion untenable, and which Mr. Girdwood has since contradicted, in a weekly paper of great circulation, as appears by the following letter:—

To the Editor of the Weekly Chronicle.

Sir—In the account given in the daily papers of the trial of Greenacre, there are, in the medical evidence, many inaccuracies and much obscurity. Even in the reports given in the *Times* and *Morning Chronicle*, in which latter newspaper especially, much attention has been devoted to furnish an accurate account, the typographical errors has sometimes destroyed the meaning of a sentence, *evidently* correctly reported. The weekly journals may have time to correct these inaccuracies; and, as I find you have devoted much attention to the whole affair, I am induced to express thus much to you, as your very immense circulation throughout the kingdom requires that your account should be as correct as posssible.

In some accounts I am made to say that the blow on the eye *must* have been inflicted by the fist. I left the mode in which the eye was struck doubtful; the prisoner was entitled to the benefit of any doubt. "It might have been the fist; it might have been something smooth; but not any thing angular or having sharp edges." These were my expressions. But what I am most anxious about is to have clearly expressed the description of *ecchymosis*, the consequence of a bruise on a living body, as distinct from *livor*—the settling of the blood in the dead body. In particularizing the differences, I left out the discolouration on the surface, and the yellow edge around it, which I found by experiment might be to a certain extent simulated on the dead body, and confined my enumeration of the phenomena resulting from and peculiar to a bruise in the living body, the effusion of blood throughout the substance of all the tissues affected by the blow; to the existence of red blood in the minutest vessels of the tissues where, in natural condition of the body, it does not flow; and lastly, to the existence of swelling of the injured part. It was on the two last appearances I now describe that I principally rested my proofs of injuries during life.

I have the honour to be, Sir,

Your obedient servant,

G. F. Girdwood.

Paddington, Thursday.

The importance of distinguishing ecchymoses or the result of an injury inflicted on the external surface of the body, or on deep seated organs during life, from *blows* or *lividity* on the dead body was not so much dwelt upon by the learned Counsel for the prisoner as might have been done; and had they been properly informed on the value of this point, which could only be done by medical advice, they might have thrown some degree of doubt on the conclusion of the Medical Profession, as to the pathological difficiences between ecchymosis and cadaverous lividity; for though generally received, the decision is questioned by some, though few, learned medico-legal authors, and is by no means positively determined in some cases. Nevertheless, the weight of medical authority is in favour of the difference between ecchymosis and cadaverous lividities, though the slightest doubt would have been in favour of the prisoner, and this would have had great influence with the Court and Jury had he not confessed that he inflicted the blow on the eye during life. But had he not acknowledged this fact, and had the medical witnesses been closely examined on the scientific distinctions between the effects of blows, or wounds, inflicted during life, and on a person in good health, or on one in delicate health and broken down constitution, immediately before or after death,

or when the body was exsanguinated after decapitation, or when cadaverous rigidity was accomplished, or decomposition advanced, a considerable doubt would have been excited, and I maintain that cases might occur in which it would be extremely difficult, if not utterly impossible, to convict prisoners accused and guilty of the crime of murder, solely upon medical testimony.

These facts clearly prove the importance of the science of Medical Jurisprudence to Counsel, to Judges, and to Jurors, and the advantages that would arise to prisoners on trial for their lives, if they had the aid of medical witnesses, who might make most valuable suggestions to their Counsel. A great beneficial change has been lately made in the criminal law by the Prisoners' Counsel Bill, and an opportunity now occurs to your Lordship in your proposed alterations of Criminal Jurisprudence to give prisoners as well as prosecutors the advantage of correct medical evidence, by enforcing the necessity of such evidence in all cases for the defence as well as the prosecution.

Another great improvement in Criminal Jurisprudence would be that Coroners should be of the Medical Profession, or, at all events, be advised by Medical Practitioners, in their investigations. This is my conviction after much reflection on the proceedings of Coroners' inquests, as will appear from my work on Medical Jurisprudence and State Medicine.

It will be argued against the proposed change, by the legal profession, who, it is to be remembered, are interested in the matter, that no one but one of their body ought to be appointed Coroner; but to this it may be replied, in addition to the arguments already urged, that Medical Practitioners and private gentlemen are now Coroners, and that no complaint is raised against the manner in which they discharge their duties. But suppose attorneys continue Coroners, there is no reason why they should not have the aid of proper medical advice, as well as Counsel and Judges, which in most cases would greatly facilitate the ends of justice. Magistrates ought, likewise, to be advised by Medical Practitioners. It is scarcely necessary to observe that a vast number of distinctions exist in different trials for the same crime, which can only be proved by medical evidence. All these distinctions may be modified by age, sex, habit, temperament, state of health, or disease, by season, climate, position of the body, and other causes which I have fully described in my work already alluded to. The investigation of these and numerous other questions affecting reputation, property, liberty and life, which become matters of judicial inquiry, are familiarly discussed in recent works on Medical Jurisprudence, and may be perused with instruction and interest by Judges, Barristers, Solicitors, Coroners, Magistrates, Jurors, as well as Medical Practitioners, and all classes of society. These works contain a vast number of questions, both civil and criminal, which are as yet but partially studied by Medical practitioners, in relation to public morals and health, as marriage, population, pregnancy, abortion, infanticide, female violation, legitimacy, divorce, attempts against health, or life, homicide by contusions, wounds, strangulation, suffocation, hanging, drowning, poisoning, questions relating to liberty, mental alienation, disqualifying diseases for witnesses, jurors, soldiers, sailors, for corporal punishment, life insurances, adulterations of aliments and drinks, burial of the dead, nuisances, putrefaction of animal or vegetable substances, erection of certain manufactories, buildings for numerous inmates, sanitary laws, or those relating to contagious diseases, dangers incident to certain situations, effects of arts, trades, and professions, and of civic states and habits of living, on health and longevity.

It is scarcely necessary to observe that the best medical evidence ought to be produced for plaintiff and defendant in all civil cases, and for prosecution and prisoners in criminal trials; but this, I grieve to indite, is by no means the case in either class of judicial investigations, unless when the wealthy are concerned. The only remedy, in my opinion, is legislative enactment, which should authorise or command the attendance of proper medical evidence, in every class of cases in which such testimony is necessary for the furtherance of the administration of public justice.

This is the law in France, Germany, Prussia, Italy, and most continental States, and is one well worthy of adoption in the administration of the law in this country.

I have the honor to be,
My Lord,
With profound respect for your
Lordship's high talents,
Your most obedient humble Servant,
M. RYAN, M.D.

4, Charlotte-st., Bloomsbury-sq.
April 22, 1837.

MEETING OF THE PUPILS OF GUY'S HOSPITAL.

A very numerous meeting of the pupils was held by permission in the anatomical theatre on Monday, the 10th of April, which was attended by nearly all the medical and surgical officers of the hospital, and lecturers. The large theatre was crowded to excess. On the motion of Mr. Aspland, seconded by Mr. Tamplin, Mr. Oldham was called to the chair. After this gentleman had opened the business of the meeting in a neat and eloquent speech, Mr. Tweedie read the report of the committee, after which the following resolutions were proposed and seconded.

Guy's April 10th, 1837.

1st. Resolution. Proposed by Mr. Ridge, seconded by Mr. Hemming. "That we have witnessed the late prosecution with feelings of personal interest, being fully sensible of the unworthy attempt which has been made to injure the general character of our school: and we offer to our fellow pupils against whom the indictment was preferred, the fullest assurance of our friendship, esteem, and regard."

Carried amidst loud cheering.

2nd. Proposed by Mr. Gaselee, seconded by Mr. Nankeville. "That the pupils of Guy's and their friends do raise a subscription to assist in defraying the expenses which the late prosecution has imposed on the defendants."

Carried unanimously.

3rd. Proposed by Mr. Lever, seconded by Mr. Morrish. "That the committee, with power to add to their number, be requested to continue to act as heretofore, and to take the necessary steps for collecting and appropriating the subscriptions."

Carried unanimously.

4th. Proposed by Mr. Carrington, seconded by Mr. Aspland. "That the kind interest which the treasurer has manifested in the late proceedings has evinced another proof of the anxiety which he ever feels for the character and prosperity of the pupils of this school, and that our best thanks are due to him accordingly."

Carried by acclamation.

5th. Proposed by Mr. Godfrey, seconded by Mr. Brereton. "That we feel but little regret in hearing that a resolution of the governors of St. Thomas's has unjustly deprived us of our long established privilege to attend the surgical practice of that hospital; for we have every confidence in the ability and kindness of our own teachers, and are perfectly satisfied with the ample opportunity for study to be found at Guy's Hospital."

Carried unanimously.

6th. Proposed by Mr. Tweedie, seconded by Mr. Cock. "That the pupils of Guy's Hospital feel it due to their legal adviser, Mr. Price, to declare their deep sense of the exertions and ability exercised by him in the defence of their friends: and they thank him most sincerely for his liberal contribution of fifty guineas towards the subscription which has been instituted to assist in defraying the expenses, and that the committee do convey to him the foregoing resolution as a testimony of the feelings of the school."

Carried amidst loud cheering.

7th. Proposed by Mr. Mosgrove, seconded by Mr. Tomlinson. "That the thanks of the pupils be given to the committee for the manner in which they have performed their duties."

Carried unanimously.

H. Oldham, *Chairman.*

8th. On the motion of Mr. Chapman, seconded by Mr. Hopgood, thanks were accorded to Mr. Oldham for the able manner in which he had presided, after which, the meeting was dissolved.

In connection with the 5th resolution, the following ducument was read from the chair :—

We, the the under-signed medical officers and teachers in the school of Guy's Hospital, hereby assure the gentlemen composing the classes, of our sense of the greatest attention and uniform propriety of conduct evinced by them, on all occasions; and express our unqualified opinion, notwithstanding the late *untoward* circumstance, that nothing has occurred to deprive them of our confidence and regard.

Henry James Cholmeley, M.D., William Back, M.D., Richard Bright, M.D., Thomas Addison, M.D., Physicians to the Hospital.

Samuel Ashwell, M.D., Obstetric Physician and Lecturer.

Astley Paston Cooper, Consulting Surgeon.

C. Aston Key, John Morgan, Bransby B. Cooper, T. Callaway, Surgeons to the Hospital.

Thomas Hodgkin, M.D., Lecturer on Morbid Anatomy.

Thomas Bell, Surgeon Dentist to the Hospital, and Lecturer on Comparative Anatomy.

Edward Cock, Lecturer on Anatomy.

Arthur Aikin, Lecturer on Chemistry.

Alfred S. Taylor, Lecturer on Chemistry and Medical Jurisprudence.

Thomas Wilkinson King, Demonstrator of Morbid Anatomy.

Charles Johnson, Lecturer on Botany.

James Stocker, Apothecary to the Hospital.

Golding Bird, Lecturer on Experimental Philosophy and Medical Botany.

John Hilton, Demonstrator of Anatomy.

G. H. Barlow, M.D., Lecturer on Practical Pharmacy.

Jabland, J. Edinborough, Assistant Surgeon to the Ophthalmic Infirmary.

John C. W. Lever, Demonstrator of Materia Medica, and Clinical Obstetric Assistant.

Alexander Tweedie, Clinical Obstetric Assistant.

As Chaplain of Guy's Hospital, I have read Lectures on Moral Philosophy, to as many of the Students of the Medical School as had leisure and inclination to attend, and have uniformly received from them the most respecful attention. I have also had opportunities of observing the deportment of the students generally, which has always seemed to me most becoming and orderly. F. Maurice.

As Steward of Guy's Hospital, I have the best means of knowing the Students, and from that have an unqualified feeling of regard to them for their orderly, gentlemanlike conduct, together with their strict observance of all the regulations of the establishment. James Browell.
Guy's Hospital, April 10th, 1837.

ROYAL COLLEGE OF SURGEONS IN LONDON.

The ensuing course of lectures in the theatre of the college, by Professors Stanley and Owen, will be commenced on Tuesday the 18th day of April next, at four in the afternoon, and will be continued on Tuesdays, Thursdays, and Saturdays, at the same hour, until completed.

The first part of the course, consisting of six lectures on Human Anatomy and Surgery, will be delivered by Professor Stanley; and the second part of the course, consisting of twenty-four lectures on Comparative Anatomy, will be delivered by Professor Owen.

Tickets of admision thereto will be delivered to members of the college, between the hours of twelve and four, upon personal or written application to the Secretary. By Order

EDMUND BELFOUR.
March 1837. *Secretary.*

Members who have not obtained tickets of admission, will be admitted on presenting their cards, or on writing their names in a book.

REGULATIONS RELATING TO THE LIBRARY AND READING ROOM. The library is open daily, Sundays excepted, to members and articled students of the college, from ten until four o'clock, except during the month of August.

Other persons desirous of admission must make application, in writing, to the library committee, specifying their christian and surnames, rank or profession, and residence.

Tickets of admission are granted for six months, at the expiration of which time application must be made for their renewal.

Readers, taking extracts from any book, may not lay the paper on which they write on any part of such book; nor may any tracings be taken from any plate without the permission of the committee.

Books belonging to the college are not to be written upon; and any one observing a defect in a book, is requested to report the same to the librarian.

Readers, desirous of consulting works not in the library, are requested to communicate their wishes, in writing, to the Librarian, in order that the same may be reported to the committee.

The admission tickets are not tranferable.

The reading room is open, to members of the college only, from seven until ten o'clock on the evenings of Tuesday, Wednesday, and Thursday:—but no person can be admitted after nine o'clock.

The reading room is appropriated to the British and Foreign Journals; and works published or presented to the college within the preceding twelve months.

Members wishing to refer to books not in the reading room must furnish the librarian with a list thereof before three o'clock of the day on which they will be required.

Works of great value, and particularly books of plates, can only be referred to in the day-time in the library.

All books taken out of the library for reference in the reading room must be delivered back the same evening to the officer in attendance.

Every person upon admision to the library or reading room is required to insert his name and address in a book provided for that purpose.

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[We regret to learn that few of the members of the college have as yet availed themselves of the above advantages, but we have no doubt when more generally known, that the library will be fully attended in the evenings. The council has done well in throwing it open to the members at large, and we feel pleasure in adding that other acts of liberality are under consideration. Eds.]

FOREIGN MEDICINE.

Cure after excision of a portion of the intestine.

BY PROFESSOR DIEFFENBACH.

A strong man, aged fifty, had suffered for fourteen days from strangulated inguinal hernia of the right side. Several ineffectual attempts at replacement had been made. At this time, Dieffenbach saw the patient. In addition to the usual symptoms, there was reason to suspect sloughing of the protruded parts, and escape of fæcal matter into the hernial sac. An incision of about three inches in length was made into the swelling; when an ichorous fluid escaped with fæcal matter, and portions of mortified intestine. The diseased intestine was drawn outwards, and three inches of it, which were partially mortified, softened and thickened, together with a corresponding portion of the mesentery, were cut away. A small artery of the mesentery required to be tied, and the ligature was cut close to the knot. During this process, the ends of the intestine were held by assistants. The angular incision in the mesentery was first united by ligature; and then the extremities of the divided intestine, by means of separate threads, so inserted as to bring the peritoneal coat alone into connexion. The mucous membrane was not perforated. The parts were then carefully replaced. Shortly afterwards, castor oil was administered, and repeated with some croton oil, until very large evacuations were produced. These were followed by great improvement in all the symptoms. Mild aperients and the antiphlogistic regimen were the only means required during the process of cure, which was complete in the fourth week after the operation.

The individual returned to his usual employment, which was laborious, and some weeks subsequently, after very hard work, and the use of very indigestible food, he was suddenly seized with all the symptoms of intus-susception, with which he died. Two diseased conditions were found in the abdomen. In the left lumbar region a portion of small intestine had coiled around, strangulated and become adherent to, another portion of the same gut; above this, the ileum and jejunum were much inflamed, adherent and covered with flakes of lymph, and contained a large quantity of excrementitious fluid, which was also found in the duodenum and stomach. The ileum, particularly near the strangulated part, was very much distended by this fluid.

Beneath the strangulation the intestine was empty and contracted, passing in this state to the right inguinal aperture, at which many convolutions were closely adherent. Whilst dividing the false membrane which united the intestine to the inner parietes of the abdomen at this part, a drop of pus was found surrounding a ligature. Here was the part of intestine which had been operated on. It was closely adherent to the abdominal parietes and the cotinguous convolutions of intestine. On cutting it open, the extremities which had been joined together by ligature, were found to be connected by a smooth cicatrix, interrupted only by the situations of the ligatures, still suppurating. The ligatures were adherent, and their extremities lay in the cavity of the intestine. The portion of intestine beyond, about a span in length, terminated in the cœcum. Nothing worthy of remark was found in the other organs.

Wochencsrift für die gesemmte Heil Kunde.

Mark of Royal Favour to Sir Astley Cooper.—Sir Astley Cooper, serjeant surgeon to the King, received at the last levee, the Grand Cross of the Royal Hanoverian Guelphic Order, and the distinguished Baronet was presented at Court by his Grace the Duke of Wellington.

Phrenology.—The murderer Bartlett before his execution at Gloucester, expressed a desire that his head should be examined by a practical phrenologist. This circumstance is supposed to have led Dr. Elliotson, whose phrenological tact far exceeds even his stethoscopical acumen, to examine the head of Greenacre, which through the official channel of Mr. Mac Murdo, the newgate apothecary, he was enabled to accomplish. We understand the doctor's examination was highly satisfactory. Greenacre submitted to the application of the *callipers* without a frown, and appeared intensely anxious that the measurement of his head should coincide with his confessions.

L'Homeópathy, Comédie-vaudeville en un acte par M.M. Fouriner et de Biéville. 8vo. pp. 15. Paris, 1836.

This is the first time in our capacity of reviewers that we have been called upon to notice a melo-drama. But homœopathy, that medical innovation, pronounced by the French Academy of Medicine to be "a dangerous mode of treatment, and the offspring of quackery," forms the subject of a *vaudeville*, first represented at the theatre of the Gymnase-Dramatique, Paris, on the 13th of October, 1836.

We shall not enter into the merits of the piece as a dramatic composition, but content ourselves by saying that its authors have furnished in a brief dialogue a better exposition of the system than any we have yet seen, not excepting the "Organon der Heilkunt," of the arch-heretic Hahnemann himself.

A roguish valet gifted with strong gastronomic propensities, or what, in the language of an infant *science* would be termed undue developement of the organ of *alimentiveness*, is detected purloining some savoury morsels of a rich Strasbourg *pâte*. The homœopath in attendance, Dr. Fritzback, ordains that the varlet "be prevented, under pain of dismissal, having any other nourishment whatsoever for during eight consecutive days, than *pâte des foies gras*."

Here a perfect cure was accomplished.

A sprightly young *femme de chambre* in like manner troubled with excess of conjugal affection, is compelled to live for two months uninterruptedly with her husband. She completely recovers before the time given has expired.

But we hasten to the dialogue, (page 6,) which may be said to contain the very pith of Hahnemannism.

Darneley, in love with a young widow, falls in with Fritzback, an old college companion, now the zealous partzan of Homœopathy.

"Fritzback. One day Hahnemann, reflecting on the enormous quantities of that *routiniere* and impotent medicine which has sent so many people into the other world, transported with indignation, was on the point of tearing in pieces his doctoral robe, and renouncing so unworthy a calling, when, inspired by heaven, the idea struck him of administering a potent dose of peruvian bark. Oh happy thought! Oh precious inspiration! was that Peruvian bark.

Darneley. Well, what then?

Fritzback. Why the bark made him fever like a horse, all but killing him.

Darneley *bursts out a laughing.*

Fritzback (*amazed.*) Well, this is always the way with men of the world—incredulous, ignorant, they laugh without understanding why.

Darneley. But my friend, *(still laughing.)*

Fritzback. If you laugh thus, let some one else explain this admirable science; as for me, I shall abandon you in your next illness to ordinary physicians.

Darneley. Well, I'm composed now.

Fritzback. This profound observer, Hahnemann, I say, ascertained that while in good health, he was attacked with ague after swallowing a dose of bark, and that ague was caused by bark.

Darneley. Argued in a superior manner!

Fritzback (*with a triumphant air.*) He therefore inferred that bark can determine a fit of ague. But, on the other hand, bark is the remedy for ague. Do you perceive? Do you begin to comprehend the consequence?

Darneley. No; not precisely.

Fritzback. Do you not foresee that the substance which cures, may also produce an ague. And if this principle be general, then, as there is no malady which cannot be innocculated, there is also none which cannot be cured; the small-pox by the small-pox, otherwise called *vaccine;* like by means of like. Well, this principle is general, and in order to convince himself thereof, Hahnemann tried in succession all kinds of substances on his relatives, his friends, his acquaintances, on myself, who have had the good fortune to approach him; he made the whole of us ill, and restored us again to health.... more or less! And yet your heart does not palpitate with enthusiasm at the sound of the name of this grand benefactor to humanity. *(Aside to Darnley.)* If you wish, by chance, more ample details, buy my pamphlet, published by Denain, superfine satin paper, price two francs and a half.

Courteous reader, Darneley was at length persuaded; if thou art not, put thy hand into thy pocket and expend four sous for the *Piece de Theatre*. Should that not suffice, then purchase the *brochure* of Denain.

THE

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XX.

THOUGHT.

Phrenological Organs—Benevolence—Large in Henri Quatre, Raphael, and the Lion—Deficient in Bellingham, Carib Indians. and the Tiger—Mode of detecting a vicious Horse—Veneration—Portraits of our Saviour and the Saints—Difference between the Heads of Whigs and Tories—Hope—Ideality—Organ of the Sublime and Beautiful—Homer, Shakspeare, and Walter Scott—Poets and Orators—Love of Justice—Small in Bruce, Haggart, and Savages—Detail—Organ of Curiosity and Story-telling—Form—George the Third—Remarkable Instance of his Good Memory—Size—Mechanical Talent—Weight—Cause of Inability to Stand in Drunkenness—Colour—Haydon and Wilkie—Place—Navigators, Travellers, Descriptive Authors of the Day, and Migrating Birds—Order—Slovenliness—Time—Number—Good Calculators—Music—Catalani, and the Italians—Mozart and the Germans—English and French—Language—Goggle-eyed Scholars—Comparison—Organs of Reflection—Burke and the Hindoos—Metaphysics—Philosophical Forehead—Wit—Rabelais and Sterne—Imitation—Actors—Objections to Phrenology refuted—Lavater on Physiognomy—Elementary and Compound Thoughts—Convolutions in the Ape and in Man—Dr. Fletcher's Opinion of Phrenology—Advantage of Consulting a Pillow—Circumstances which promote the Activity of Thought—Voluntary Motion—Motions subservient to Respiration—Compass of the Voice—Mechanism of a Musical Shake—Vocal Muscles—Endless Variety of Tones which they produce—Infinitisimal Difference between a True and False Note—Howling Ape—Voices resembling a Flute and a Whistle—Vocal Organs in Birds—Mode of Imitating the Song of Birds—Animals without a Voice—Cause of the Noises made by Grasshoppers, Flies, Gnats, and Beetles—Whispering—Musical Snuff-Box in different Gases—Motions subservient to Digestion—Structure of the Teeth in different Animals—Artificial Teeth—Tongue-tied Infants—Motions subservient to Sensation—Expression of the Eyes and Nostrils—Paintings of Hebe—Motions of the Body in general—Locomotion in Oysters—Unity of Organization in Reptiles, Fishes, and Insects—Structure of Bones—Impregnation of Bones with Madder—Muscles of the Neck in Man, Quadrupeds, Tortoises, and Birds—Mode of Curing a Stooping Gait—Structure of the Spine—Proper Attitude for Statues—Standing at Ease—Going on all Fours—Sleep in the Erect Posture—Shakspeare's Definition of Bowing.

13. *Benevolence.*—Situated just before the anterior fontanel. It is large in Henry the Fourth of France, and in Raphael. It is also large in the lion, but is deficient in the tiger, and most other carnivora; as it is likewise in Bellingham and the Carib Indians. By observing whether this part is well developed or not, a vicious horse may be distinguished from a mild one.

14. *Veneration.*—This and the four following organs are proper to man. It is larger in females than the other sex; and is very large in the pictures of the saints, and of Jesus Christ. It is larger in Tories than Whigs; the former being fond of old institutions. In Mac Innis it is very large; and she was very superstitious.

15. *Hope.*—Very large in Raphael.

16. *Ideality.*—This is the organ of

wise apply our ideas of common matter, as being most familiar to us, to animal matter, an error we should carefully avoid, and hitherto a very common one. Matter is demonstrable by our senses alone; if a man had never seen light, he could not, from any description, form an idea of it; if he had been always deaf, he could have no idea of sound; if he had no touch, nor taste, nor smell, if he were without sensation, which is easily conceivable, he would have no idea that there existed such a thing as matter. Again, it is from matter alone that we come to a knowledge of our senses; so that it is from their reciprocal effects we have the only proof of the existence of either.

An animal, then, must be so composed as to be susceptible of impression; this impression consists of an alteration in the parts impressed. Matter must make the impression on us before we are sensible of its existence. Matter, however, is in itself only an abstract idea; it is not the matter itself, but some of the properties that belong to it, that make an impression on our senses, as sourness, heat. When we see a man, it is not the matter of the man that makes the impression, but the light which he reflects; this light the eye has the power of conveying to one point, so as to give a determinate shape on the organ of vision. The impression made on our eye, by a body exterior to us, exactly similar to touch, is the act of seeing: it is an impression made of a given figure, and every part of the body might be made able to see as well as the eye; for instance, a refracting glass was placed before my skin, so that the image should be thrown on my body, of the same shape as that which is exterior, if my sense of feeling was so very delicate as to distinguish this shape, it would give me the same idea as seeing. A drum has no sound in itself, but it has the power of putting the matter of the air into action, which produces the idea of sound by its impression on the organ of hearing; yet the sense of touch would appear to offer the greatest contradiction to the above statement. Touch, however, arises from the resistance of matter, which alters the form of the part touching, and this alteration causes feeling. If sensation arose from the matter itself, and not from its resistance, we ought to have as many kinds of sensation as we have of matter; but our sensations correspond with the different properties of matter, not with the different kinds. But to return to our subject: all that composes this globe of the earth is called matter, and is most probably formed of some few substances differing in specific properties from each other, but which in different combinations produce a very great variety, and consequently produce a great variety of sensations in us. Matter, thus compounded, is apparent to our senses in some one of the following states—a state of solidity, fluidity, or vapour. Solidity appears to be the natural state of matter; fluidity and vapour seem to imply a kind of force, particularly vapour.

Attraction is one of the most remarkable properties of matter; of this there are several kinds.

First. *Elective attraction*, or the disposition in all matter to unite with some particular kinds of matter rather than with others, and form a compound with them that would seem almost homogeneous. Elective attraction can only exist when bodies are in a state of either fluidity or vapour; it is one of the most refined properties of common matter, producing new compounds by a species of regeneration, but destroying the old by the same action; and this property is given to matter to insure the variety that exists in the regular solids and fluids that compose the world.

Secondly. The attraction of cohesion is an increase of the same attraction, by which bodies are brought into closer approximation, and kept in one mass. When a body is so subdivided as to be reduced to its constituent particles, that is to a state of fluidity, still each particle has its centre of gravity, on which it may be said to move. A fluid then would seem to be a body reduced to its original parts, from the attraction of cohesion being destroyed; each particle, however, has its centre of attraction or gravity. As the centre of the globe attracts every particle of matter that is on it, so every mass of matter, simply as matter, has a centre of attraction, by which it can bring bodies to it, or keep them in contact with it; thus if we were to drop some quicksilver, and that it did not meet any resistance, it would assume a globular form, not from the attraction of cohesion, but from the attraction of gravitation. Where, however, the attraction of cohesion is but slight, as in fluids, this will not take place unless there is some affinity, as between acids and water, alcohol and water, &c. Oil and water, when in a state of fluidity, will not unite by this kind of attraction.

The attraction of cohesion also gives rise to other general properties, such as

figure, magnitude, &c. These are the properties that render bodies suitable for mechanics, but there are others necessary; a clock may, for instance, be correctly made, yet it will not go until we bring in the aid of the pendulum, or coiled spring. Thus we observe something like the life of mechanics, which is not matter, but a property of matter; what is simply mechanical, that is inert matter, must have, as it were, a soul to put and continue it in motion. When these properties have their full effect, they become, by causing other effects, the regulators of the whole mass, with regard to motion, space, &c.

These are some of the properties of common matter. I am not able to determine how far repulsion is a universal principle, but I suspect it is not so general as the others; that there is such a principle is evident, because without it neither fluidity nor vapour could take place. Heat may, probably, be the great repulsive principle; at least, it counteracts attraction, and causes repulsion when diffused among the particles of matter. Thus the matter of the globe is, in general, regulated by a property so constituted, that it cannot err in its common actions.

There are other properties belonging to matter, which are more extended than those just mentioned; it undergoes changes not in the least connected with, or arising from them, and its properties are therefore entirely different, appearing, as it were, an anomaly in the combination of matter. Its continuance by preparing matter similar to itself is effected by changes entirely different, which produce the animal and vegetable, or organic portion of the world. I shall consider the properties of these in my next lecture.

THE ANATOMIST.

THE PELVIS,

Is formed of the os sacrum, os coccyx, (both of which bones have been already described) and the two ossa innominata.

OS INNOMINATUM,

Consists in early life of three bones, the ilium, ischium, and pubis. We shall describe each of these bones separately.

OS ILIUM.

Situation, upwards and outwards in regard to the pelvis, forming the upper part of the acetabulum, and the lower lateral part of the abdomen.

Body, constricted, forms the upper and outer part of the acetabulum, joining the pubis anteriorly, and the ischium posteriorly.

Ala, expanded, offers four aspects, viz., the dorsum, which is rough posteriorly for the gluteus maximus, and presents two semicircular lines for the gluteus medius and minimus muscles; also a nutritious foramen—the venter which forms the iliac fossa, in which also is a nutritious foramen—the rough articular surface for connection with the side of the sacrum, and a small portion smooth and immediately above the sciatic notch, which enters into the formation of the true pelvis.

Processes.

The *Crest* which forms the upper border of the ala.

The *anterior superior spine,* which terminates the crest anteriorly.

The *anterior inferior spine,* immediately above the acetabulum.

Both spines are separated by a *notch.*

The *posterior superior spine,* which terminates the crest behind.

The *posterior inferior spine,* separated from the former by a small notch.

The *Ileo-pubic eminence,* marks the union of this bone with the following,

OS PUBIS.

Situation, forepart of pelvis, and internal part of acetabulum.

Body, forms the internal and superior part of the acetabulum.

Horizontal ramus, passes inwards to meet the opposite ramus.

Symphisis pubis is formed by the union of both horizontal rami.

The angle is formed by the horizontal ramus turning down to form the symphisis.

The tuberosity is about three quarters of an inch external to the angle.

The crest is the small upper transverse portion of bone between the angle and tuberosity.

The obturator groove is situated upon the under surface of the horizontal ramus.

The descending ramus passes backwards and outwards to meet the ascending ramus of the ischium, it bounds the thyroid hole, and by the divarication of the two descending rami, the *arch* of the pubis is formed.

THE ISCHIUM.

Situation, lower, outer, and back part of the pelvis.

Body, forms the outer and back part of the acetabulum; immediately beneath this cavity is a groove for the tendon of the obturator externus muscle. The anterior thin edge of the body assists to form the thyroid hole, the posterior to form the sciatic notch.

Spine, projects backwards and inwards, and bounds the great sciatic notch inferiorly.

Tuberosity, the thickest part of the bone, on which we rest when sitting. Between this process and the spinal is a pully-like surface, for the tendon of the obturator internus muscle.

Ascending ramus, turns forwards, upwards, and inwards, and joins the descending ramus of the pubis; it bounds the thyroid hole by its outer thin edge, and the lower aperture of the pelvis, by its thick one.

ACETABULUM,

Is formed by the union of the bodies of the ilium, ischium, and pubis; the ilium forming less than two-fifths; the ischium more than two-fifths; and the pubis the smallest part. It presents an articular surface for the head of the femur, and a rough surface inferiorly and internally for the ligamentum teres, where also this cavity is shallowest, and its border deficient.

SUPERIOR EXTREMITY,

Consists of the shoulder, the arm, the forearm, the wrist, and the hand.

THE SHOULDER,

Is formed of the clavicle and the scapula.

THE CLAVICLE.

Situation, from the semilunar notch in the upper piece of the sternum, to the acromion process of the scapula.

Figure, curved like the italic *f*.

Sternal end, thick, presenting a triangular articular surface; its edge is rough for ligaments.

Body, cylindrical towards sternum, flat and expanded towards its acromial end. Upon its under surface are a ridge for the rhomboid ligament, a rough tubercle for the coraco-clavicular ligaments, and between both a groove for the subclavian muscle, in which groove is found the nutritious foramen.

Acromial end, rough and flattened, passes over the coracoid process to meet the acromoin scapulæ, with which it articulates by a small oval surface.

SCALPULA.

Situation, upper and back part of thorax, extending from the second to the seventh rib.

Figure, triangular.

Costæ or edges. The superior or cervical is the shortest and is interrupted by a notch for the suprascapular nerve; the inferior or axillary is next in size, and is the thickest; the posterior or vertebral is the longest, and is also called the base of the scapula.

Angles. The superior posterior angle is acute and prominent, the inferior angle is thicker and rounded, and the anterior angle has connected to it the neck of the bone.

Costal surface, or subscapular fossa, is slightly concave and divided by three or four lines, which run from above obliquely downwards and inwards.

Dorsal surface is divided unequally by the spine, which thus gives rise to the fossæ.

Spine arises at the vertebral margin, and proceeds forwards, becoming more elevated, and terminates in the acromion, which surmounts the shoulder joint and articulates with the acromial end of the clavicle by a small oval surface.

Supraspinous fossa, situated above the spine, is deep, and presents a nutritious foramen; it lodges the supraspinatus muscle.

Infraspinous fossa, larger, irregularly concave and convex, affords attachment to the infraspinatus muscle, the teres minor muscle, and by an inferior rough surface, to the teres major muscle.

Coracoid process overhangs the inner and upper part of the glenoid cavity. This process has a crooked appearance, and gives attachment to the pectoralis minor, the short head of the biceps and the coraco-brachialis muscles, also to ligaments.

Glenoid cavity articulates with the head of the humerus is shallow and oval form, being broader below, and giving attachment by its upper narrow part to the long head of the biceps muscle.

Neck is the contracted portion of the scapula immediately behind the glenoid cavity; it gives attachment to the capsular ligament of the joint.

OS HUMERI.

Connections to the scapula above and radius and ulna below.

Head forms a small section of a large sphere, is smooth and covered with cartilage in the recent state.

Neck, a slight contracted line, rough for the attachment of the capsular ligament. It is united to the shaft by an obtuse angle.

Tuberosities exist at the junction of the shaft with the neck. The largest is posterior, and affords attachments to the supraspinatus, infra-spinatus, and teers minor muscles; the smallest being anterior, more prominent, and giving attachment to the subscapular muscle.

Bicepital groove is between both tuberosities, lodges the long bicep tendon, and affords attachment by its anterior margin to the pectoralis major muscle, and by its posterior margin to the latissimus dorsi and teres major muscles.

Shaft is rather twisted, the upper extremity cylindrical, the lower flattened upon its external and central aspect, is a rough portion for insertion of the deltoid muscle and upon the minor side of the bicepital groove is a slight rough line for the insertion of the coraco-brachialis muscle. The nutrious foramen is directed downwards towards the elbow joint.

Internal condyle is prominent and sharp, affording attachment to the pronator and flexor muscles, and to the internal lateral ligament.

External condyle is less prominent, but descends nearer the elbow joint, and gives attachment to the supinator and extensor muscles, and to the external lateral ligament.

Articulating surfaces. First, a small round *head,* situated externally and nearer the anterior than the posterior part of the bone, for the radius. Second, the *trochlea* or pully-like surface placed internally for the ulna; being much below the level of the *head,* so as to give the articular surfaces an oblique direction from above downwards and inwards.

Coronoid fossa at the fore part of the trochlea to receive the coronoid process in the bent position of the forearm.

Olecranoid fossa at the back part of the trochlea, to receive the coronoid process in the extended position of the forearm.

ULNA.

Situation at the inner side of the forearm.

Upper extremity articulates with the humerus and radius.

Olecranon process, posterior forming the projection of the elbow, is the highest point of the bone, and by its superior border gives attachment to the triceps muscle; beneath this it is smooth for a bursa mucosa.

Coronoid process, anterior and inferior to the olecranon, is smaller than it, and gives attachment to the brachialis anticus muscle, the flexors and pronators of the forearm and to the internal lateral ligament.

Lesser sigmoid cavity, oval and receives the side of the head of the radius.

Greater sigmoid cavity has its long axis from before backwards, is directed in the centre by a transverse line and by a vertical ridge into two lateral portions, is bounded above by the olecranon process, and below by the coronoid process.

Shaft presents three surfaces and three edges; the anterior surface affords attachment to the flexor profundus muscle, and is pierced by the nutritious foramen, which is directed upwards. The posterior gives attachment to the anconeus muscle and to the exterior muscles of the thumb; the internal is subcutaneous for its greatest extent. Of the edges, the external is the best marked, and gives attachment to the interosseous ligament.

Carpal extremity slender and rounded, presents the *head,* which by its side articulates with the radius, and by its carpal aspect with the fibro-cartilage of the wrist-joint; also the *styloid process* at its inner margin, which by its apex gives attachment to the internal lateral ligament of the carpus, by a depression of its root, to the fibro-cartilage; and posteriorly it presents a groove for the tendon of the flexor carpi ulnaris muscle.

RADIUS.

Situation, external to the ulna; it is also shorter than that bone.

Head, a superficial circular cavity, articulating above with the humerus and laterally with the ulna.

Neck an inch in length, narrow and rounded, and terminating in the

Tubercle, a prominent process into which the tendon of the biceps muscle is inserted.

Shaft, triangular, by its anterior surface affording attachment to the flexor pollicis proprius, and pronator quadratus muscles, by its posterior convex surface to the supinator brevis muscle, and extensor muscles of the thumb; its exter-

nal surface being round and convex, and rough near its centre for the pronator teres muscle. The inner edge of the shaft is sharp for the attachment of the interroseous ligament, and the nutritious foramen upon the anterior surface of the shaft is directed upwards.

Carpal extremity expanded, gives attachment by its anterior edge to the anterior carpal ligament; upon its posterior edge is a shallow groove at its ulnar side for the extensor communis digitorum and indicator muscles, a second more externally, narrow and oblique for the tendon of the extensor secundi inter nodii policis muscle, and a third more external than the last for the tendons of the extensores carpi radiatis longior and brevior. Upon the radial edge of this extremity is the mark of the passage of the extensor ossis metacarpi and the extensor primi internodii pollicis muscles.

Styloid process, prolonged on the outer side of the bone downwards, giving attachment to the external lateral ligament of the carpus.

Sigmoid cavity on the inner border of the carpal extremity for articulation with the ulna.

Carpal aspect presents two articular surfaces, divided by a slight elevation; the external being triangular for articulation with the os scaphoides, the internal square for the os lunare.

CARPUS.

This part consists of two rows of small bones, four bones in each row, placed between the forearm and metacarpus. It is convex and rough upon its dorsal aspect, and concave upon its palmar aspect, where the vessels, nerves, and tendons of the flexor muscles are situated; towards the radius and interarticular cartilage of the wrist, it is convex; towards the metacarpus it presents articular surfaces for the metacarpal bones.

FIRST ROW.

Os Scaphoides.

Situation, on outer and upper part of the carpus, next the styloid process of the radius.

Articulations, with the radius above, with the trapezium and trapezoides below, and with the lunare and magnum internally.

Os Lunare.

Situation, between the scaphoides and cuneiforme.

Articulations, with the radius above, with the magnum and unciforme below, with the scaphoid externally, and with the cuneiforme internally.

Os Cuneiforme.

Situation, at the internal and upper part of the carpus between the lunare and pissiforme.

Articulations, with the lunare externally, with the carpal fibro-cartilage above, with the unciforme below, and upon its palmar aspect with the pissiforme.

Os Pissiforme.

Situation, upon the inner and palmar aspect of the cuneiforme.

Articulation, by a circular small surface with the cuneiforme.

SECOND ROW.

Os Trapezium.

Situation, between the scaphoides and metacarpal bone of the thumb.

Articulations, with the scaphoides above, with the metacarpal bone of thumb below, and internally with the trapezoides and side of the metacarpal bone of the index finger.

Groove, upon its palmar aspect for lodging the tendon of the flexor carpi ulnaris muscle.

Os Trapezoides.

Situation, between the trepezium, magnum, scaphoides, and metacarpal bone of the index finger.

Articulations, with the scaphoides above, the trapezium externally, the magnum internally, and below with the metacarpal bone of the index finger.

Os Magnum.

Processes, head, neck, and body.

Situation, between the scaphoides and lunare, and the second, third, and fourth metacarpal bones.

Articulations, by its head with the scaphoides and lunar above, by its base with the second, third, and fourth metacarpal bones below, externally with the trapezoides, and internally with the unciforme.

Os Unciforme.

Situation, between the cuneiforme and metacarpal bones of the ring and little fingers.

Articulations, with the lunare above, the magnum externally, the cuneiforme internally, and below with the fourth and fifth metacarpal bones.

Process, a hook-like process upon its palmar aspect.

METACARPUS.

This part consists of five long bones placed between the carpus and the fingers.

Bases, irregularly flattened for articulation with the second row of carpal bones, with rough surfaces for the attachment of ligaments.

Heads, convex, and rounded for articulation with the first bones of the fingers, and affording attachments for the capsular, transverse, and lateral ligaments.

Bodies.—The *first*, for the thumb is the thickest and shortest; the *second*, *third*, and *fourth* present on the dorsal aspect of each a prominent line, which bifurcates towards the head; the *fifth* presents an oblique line on its dorsal aspect, which divides it into two surfaces. The third is the longest.

FINGERS.

The fingers are composed of three phalanges, except the thumb, which has only two.

The metacarpal, or first Phalanges, are five in number, their bases presenting oval concavities for the heads of the metacarpal bones; their anterior extremities are convex from before backwards, and concave from side to side, to articulate with the second phalanges.

The Middle, or second Phalanges, are four in number, and smaller than the first; their bases present pully-like surfaces, to form a ginglymoid joint with the first phalanges, and at their anterior extremities resemble the first.

The Ungueal, or third Phalanges, are five in number, and the smallest. By their bases they form a ginglymoid joint with the middle phalanges; and their extremities are convex upon their dorsal aspects for the support of the nail, whilst their palmar aspects are irregularly tuberculated for the extremities of the fingers.

The Sesamoid Bones are sometimes absent. In general two are to be found between the metacarpal bone of the thumb and its first phalanx, and one or two at the corresponding joint of the index finger.

ATROPHY,

OR

DIMINUTION OF THE HEART.

Laennec had found the heart of a man aged fifty-five years as small as that of a child of twelve years. Bouillaud observed the heart of a woman aged sixty-one as small as that of a child of twelve years old. In some cases the substance of the left ventricle was no more than a line and a half in thickness. In other cases the heart loses a third, a fourth, or one half of its natural size.

Signs of Atrophy of the Heart.—The symptoms of atrophy are the reverse of those of hypertrophy already described (See p. .). The pulsations of the heart are small, concentrated, the bruits which accompany them are feeble, the shock of the heart is felt with difficulty or not at all by the hand, or it is much weaker than natural, and there is scarcely any dullness of sound in the precordial region. The pulse is small, thready, and hard in *concentric* atrophy, while it is soft, feeble, and full in *aneurismal* or *excentric* atrophy. The movements and sounds are extremely feeble and distant on auscultation. The first sound is very valvular, and clear in some cases, but when the disease is extreme, it is inaudible. Atrophy of the heart may exist in general emaciation, but the latter condition may be extreme, and hyperthropy present. I have observed cases of atrophy in which the ventricle was wasted to the thinness of bank paper.

Causes.—The causes are local or general. Among the local causes are long continued compression of the heart by effusion of fluid, by tumours, or any other mechanical cause, and contraction of the coronary arteries by disease, as ossification, calcareous, or cartilaginous deposits. The general causes are different morbid states, or different conditions which impair the nutrition of the whole body; chronic diseases which induce great emaciation, such as phthisis, cancer, affections of the brain, liver, spleen, uterus, &c. &c. typhoid enteritis, eruptive fevers which do not prove fatal for two or three months, &c.

Treatment. — Nutritious aliment,—every thing calculated to improve the general health; and the alleviation of diseases in other parts which cause general emaciation, so far as this can be accomplished. Atrophy of the heart must be considered incurable.

AUGMENTATION AND DIMINUTION OF ABSORPTION OF THE SEROUS AND CELLULAR TISSUES OF THE HEART.

PASSIVE HYDRO-PERICARDIA, AND PASSIVE ŒDEMA OF THE CELLULAR TISSUE OF THE HEART.

Passive hydro-pericardia does not differ essentially from the active species in anatomical characters.

The anatomical characters of œdema of the heart are a tremulous gelatiniform matter in the cellular tissue, which, on pressure, is found to be a transparent, serous, limpid, yellowish, or greenish yellow serosity. The infiltrated tissue is opaline, or of a dull white colour, as if it had been macerated in water for some time.

There is no sign by which we can positively recognize this disease of the heart during life; but we may suspect its existence in persons affected with passive general dropsy, which may extend to every part of the cellular tissue, which is the base of every tissue and organ in the body.

Causes.—The causes of dropsies are numerous obstacles to the course of the blood, whether mechanical, physical, or vital.

The obliteration of the cardiac veins is a cause of passive hydropericardia, or œdema of the heart. A varicose state of the coronary veins and their branches, and a difficulty of disgorging themselves into the right auricle, was the cause of the disease in persons treated by M. Bouillaud.

Hydropericardia may be also caused by rupture of a serous cyst, or hydatid, or by blood effused into the pericardium.

Treatment.—Depletion, diuretics, purgatives, and the usual remedies for dropsy will be required.

PNEUMO-PERICARDIA.—HYDRO-PNEUMO-PERICARDIA.

The pericardium may also secrete gas, which is termed *pneumo-pericardia,* and when combined with fluid, *hydro-pneumo-pericardia.*—(Bouillaud.)

In this disease the pericardium resounds on percussion like an inflated bladder, and if its parietes are incised the gases escape with a whizzing noise.

The causes of this disease are as yet unknown, and the diagnosis is drawn from the tympanitic and splashing sounds in the region of the pericardium. Laennec sometimes discovered pneumo-pericardia by the clear resonance under the sternum, or by the sound of fluctuation caused by the beatings of the heart, and by strong inspirations. In a case of hydro-pneumo-pericardia, M. Bricheteau heard in the pericardial region a bruit or sound similar to that of water agitated by the wheel of a mill, which was evidently caused by the alternate motions of the heart. We must not mistake the similar sounds elicited from the same region when the stomach is partly distended with fluids and gas, and when it encroaches on the heart, as in dyspeptics, giving rise to palpitations and other functional derangements of the heart, which are often mistaken for structural or organic diseases. Nervous women, and the delicate of the other sex, are very liable to such derangements, but the distinction can be made by every scientific practitioner.

NEUROSES, OR NERVOUS AFFECTIONS OF THE HEART.

There is no class of disorders so common as those of the action of the heart, and yet it is a most remarkable fact, that the best authors who have treated on diseases of this organ, have scarcely noticed them. Corvisart has not even named them; Laennec has devoted only a few pages to their description; Andral has not described them, Hope has nearly overlooked them, and even Bouillaud himself allots but five pages to their consideration. The best account of them with which I am acquainted is by Dr. Calthrop Williams of Nottingham, though by no means a complete one.*

The nerves of the heart, in common with all others in the body, are liable to functional disorders or derangements of the principle of their power, termed innervation, but which are not appreciable, as well as to structural or organic diseases. These disorders of function comprise all unpleasant sensations or feelings, from the slightest to the most intense pain, spasm, or neuralgia; and may be divided into three principal classes—those of augmentation, diminution, and irregularity of the phenomena dependent on

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* "Practical Observations on Nervous and Sympathetic Palpitations of the Heart, particularly as distinguished from Palpitation the result of Organic Diseases; to which are prefixed some General Remarks on the Use of the Stethoscope and Percussion in Diseases of the Heart and Lungs."—London, 1836.

the nerves of the heart. M. Bouillaud has proposed the terms of *hyperdynamia* of the heart to augmentation of the movements of the organ; *adynamia* to the diminution of these movements; and *ataxodynamia* to irregularity of the same movements. I should prefer more accurate terms, as cardio-hyperdynamia, cardi-adynamia, cardi-ataxodynamia.

Nervous palpitations of the heart may exist without any organic lesion, may continue for an indefinite period and be cured; or they may be sympathetic of organic diseases of the heart, as inflammation, hypertrophy, atrophy, &c.; or of diseases of the brain, the lungs, stomach, digestive and other abdominal organs; or of those in any other part of the body. Both classes are often troublesome, and the former very unnecessarily alarming, and too often supposed to be organic and incurable. This was well observed by the late truly eminent Dr. Baillie, as appears by his posthumous work:—"There are in truth few phenomena which puzzle, perplex, and lead into error the inexperienced (and sometimes the experienced) practitioner, so much as inordinate action of the heart. He sees, or thinks he sees, some terrible cause for this tumult in the central organ of the circulation, and frames his portentous diagnosis and prognosis accordingly. In the pride of his penetration, he renders miserable for a time the friends, and, by his direful countenance, damps the spirits of his patient. But ultimate recovery *not seldom* disappoint his fears, and the physician is mortified at his own success." Such mistakes are still too often made by those who do not employ auscultation and percussion; and there are as yet but a small proportion of medical practitioners, unless those educated within the last few years, who employ these means of diagnosis.

Mr. Wardrop has well observed in his valuable work,* that nervous affections of the heart must precede structural diseases. "It is quite evident that such changes of structure must be preceded by a train of phenomena, and by a series of lesser disturbances in the function of the heart, the detection of which will enable us to apply remedial means with a probability of achieving the same advantages, as in the treatment of diseases in other organs." It is therefore manifest that it is most important to study the nervous or functional derangements of the heart, which are of common occurrence; and also to distinguish them from organic or structural diseases.

* On the Nature and Treatment of the Diseases of the Heart, with some New Views on the Physiology of the Circulation, by James Wardrop, M.D., Surgeon to the late King, Lecturer on Surgery, &c. London, 1837.

NERVOUS PALPITATION OF THE HEART.

The term nervous palpitations of the heart is given to those frequent strong and tumultuous movements which agitate the heart in individuals, who have no appreciable material or organic lesion of this organ. These movements may be transient or momentary, or they may continue for a long time. They sometimes augment the force or impulse of the heart, and enable the practitioner to see and hear them at some distance from the sufferer; and the patients themselves sometimes hear them when they repose on the left side. Palpitations are sometimes accompanied by a slight and transient bruit de soufflet, which disappears as soon as the heart becomes quiet. They are also attended by a feeling of sinking and anxiety, which is difficult to describe, which patients refer to the region of the heart or pit of the stomach, and often designate "a sinking at the heart." In some cases there is a tendency to fainting fits or syncope, and a pulsation at the pit of the stomach.

Causes of nervous palpitations.—The causes of nervous palpitations are extremely numerous, such as the various mental emotions, and every kind of muscular exertion, which must more or less accelerate respiration and the circulation of the blood.* Every cause that produces debility excites the disorders under consideration.

Persons of a nervous temperament and

* Mr. Wardrop has established the existence of three most important functions connected with the circulation of the blood, which had hitherto been overlooked.

"1. That the muscles, besides being the active organs of locomotion, perform the important office of increasing the quantity of arterial, as well as of venous blood within the cavities of the heart.

"2. That the lungs regulate the supply of blood to the heart, so as to prevent congestion within the heart's cavities; and

"3. That the subcutaneous veins performing the office of a reservoir, prevent congestion of blood within the pulmonary vessel." *Op. Cit.*

those of both sexes subject to hysteria, hypochondriasis, melancholy, epilepsy, and general nervous disorders, are very liable to palpitations. Vivid mental emotions, joy, grief, anger, sadness, fear, anxiety, &c., the acts of weeping, sobbing, crying, laughing, and swinging, intellectual labour induce them—so that the chief causes are mental or cerebral excitement, irritation or depression. Debility, during the convalescence of fevers or other acute diseases, or that caused by chronic or slow diseases, severe loss of blood by any kind of hæmorrhage, inordinate natural discharges, abuse or long use of purgatives, spare or unwholesome diet, the abuse of spirituous, vinious, or fermented liquors, want of sleep, long continued anxiety and distress, close confinement, intense study, dissipation and debauchery, excess of venereal pleasures, and more particularly onanism, as well as excessive sexual intercourse, are causes of palpitations and irregularities of the heart. Persons subject to anemia, or great pallidity from loss of blood by abortion,* or any other cause, or to chlorosis, which is very analogous to anemia, are very liable to nervous palpitations of the heart.

Chlorotic girls are often supposed to labour under organic diseases of the heart when there is only functional or nervous disturbance of the organ. They complain of palpitations, pain in the region of the heart, head-ache, difficulty of breathing, pain in the left side over the spleen, &c.; are bled, leeched, cupped, blistered, &c., when the opposite treatment ought to be employed, as tonics, quina, strychnia, chalybeates, iodide of iron, &c. Such persons may have transient bruit de soufflet, or bellow's sound of the heart, and a musical sound in the crural and carotid arteries, which is termed bruit de diable, from its resemblance to the whizzing of a double top, used in play in France, and termed diable. Palpitations are also ascribed in other cases to organic diseases of the heart, but the diagnosis cannot be mistaken by any one who will read with care the preceding account of such diseases. Persons of a nervous temperament and full habit are also very subject to palpitations, They complain on going up stairs, or any other ascent, or raising the arms, carrying or lifting any weighty substance, using any exertion. They are most affected in cold, moist, or foggy weather. They experience pain or numbness in some part of the left arm, throbbing in the head, fulness in the neck, sense of strangulation in the throat, fluttering of the heart, or as if it was grasped or compressed, and sometimes its motion is termed rolling, thumping, strong then weak, irregular or intermittent. It is maintained that when the action of the heart is intermittent, there is a complete though instantaneous suspension of the contraction of the organ; and when the pulsation is irregular, that there is only a partial contraction. Thus Laennec described *real* and *false* intermittence of the heart's action.

Persons who suffer from spinal irritation are also very liable to palpitation, and I have counted the pulse 160 in such cases. There are also pains extending from the spine to the abdominal and thoracic organs, to the neck, shoulders, head, limbs, and, by nervous sympathy, to every part of the body. The respiration is difficult, or easily rendered so, on any slight exertion or mental emotion; and the pressure of the stays on the chest, round the waist, or lower part of the spine, is intolerable. Pressure on the affected part of the spine has suddenly induced pain in the chest, cough and palpitation; and the disease is very common in large towns to girls and young women, from the age of fifteen to twenty-five years, and in some to fifty. I have fully described it elsewhere.* Lastly, nervous palpitations are very common at the cessation of the menstrual function, and to women labouring under diseases of the womb, ovaries, breasts, or any chronic complaint. They may be slight, transient, and intermittent, like all other nervous disorders; and they recur more frequently in proportion as the heart becomes more irritable; but they do not produce any serious alteration of the health for a long time, though I have known them when caused by terror to be speedily followed by hypertrophy of the heart. They are most troublesome after vivid mental emotions and muscular exertion, though they are sometimes most

* The Cyclopædia of Practical Surgery, edited by W. B. Costello, M.D. Part I. April 1837. Art. Abortion, by M. Ryan, M.D.

* See Manual of Midwifery and Diseases of Women and Children. Third edition, plates, 1832. By M. Ryan, M. D. See also Teale on Neuralgia. Tate on Hysteria. Addison on Uterine Irritation. Williams on Nervous Palpitation, &c.

distressing when the body is in a state of repose, as during the first part of the night, and often prevent sleep for several hours. They are also occasionally accompanied by a sensation of internal agitation or fluttering in the head, chest, or abdomen, and there is often a copious evacuation of urine. They are least troublesome when the person is in the open air and taking exercise; a fact attested by most nervous women.

Diagnosis.—The diagnosis is very difficult in some cases (Andral, *Dict. de Med. en* vol. 21), though easy by means of percussion, auscultation, vision, and touch, by which the heart can be measured with *geometrical* precision, and its organic diseases determined, so that nervous palpitations can be easily distinguished from those accompanying considerable organic lesions of the heart. (Bouillaud.) In nervous cases the sounds of the heart's contractions, though clear, are not heard loudly over a great extent of the chest. Nervous palpitations are generally without impulse; the head of the auscultator, &c. is not sensibly elevated as by the increased motion and shock of hypertrophy. They are also known by the absence of the signs which accompany organic diseases of the heart, and more frequently affect the auricles than the ventricles, and the right auricle than the left. (Professor Home.)

Treatment.—In plethoric individuals, general and local bleeding in the region of the heart, by leeching, cupping, and then the use of tartarized antimony, digitalis, hydrocyanic acid, colchicum, antispasmodics, and a proper use of purgatives. In such cases, low diet, repose, and quietude of mind and body, will be necessary. Counter-irritation by antimony or blisters, or an anodyne plaster over the region of the heart, as one of belladonna, opium, hyscoyamus, or conium, will be very beneficial. In delicate, nervous, or chlorotic persons, tonics, chalybeates, warm or cold baths, shower baths, change of air, a nourishing diet, improvement of the digestion and general health with moderate exercise, form the indications of the treatment. Bloodletting is generally injurious, and I have known the worst consequences produced by it. Chlorotic girls complain of headache, palpitations of the heart, and agitations in many or most parts of the body; and these symptoms will be aggravated by bleeding, purging, low diet, &c. In such cases there is anemia, or, a universal pallidity of the whole surface of the body, or a want of red blood, which is not to be supplied by depressing measures.

In nervous palpitations from mental emotions, tranquillity of mind is indispensable, and moral means alone can remedy moral palpitations. Nervous palpitations are often aggravated by the fear of organic disease of the heart; but if the medical practitioner convinces his patient of this error, a cure will, in most cases, be very speedily accomplished.

NEURALGIÆ OF THE HEART.

Neuralgic pains in the heart are transmitted from the nerves of the organ to the phrenic, intercostal, pneumo-gastric, brachial, and cerebral plexuses, &c., and not only cause derangement of function in all the parts supplied by these nerves, but by sympathy in all parts of the body. It is most probable that certain cases of nervous asthma, angina pectoris are simply neuralgic affections; and these are generally relieved by powerful sedatives and anti spasmodics, as in cases of nervous palpitations.

Spasm of the Heart is described by Laennec, though considered an imaginary disorder by Bouillaud, who states that there is no positive fact to attest its existence. But I see no reason why the heart should not suffer from spasm as well as all muscular organs.

LIPOTHYMIA—NERVOUS SYNCOPE.

Swooning, lipothymia, and syncope are only degrees of the same nervous affection—a diminution of the innervation of the heart. The highest degree, which is syncope, is really a momentary paralysis of the heart.

The phenomena of complete syncope are similar to those of sudden death, and only differ by life being restored in the majority of cases, though in some rare cases real death takes place. It is a most important physiological point in criminal cases to distinguish between apparent and real death, or whether contusions or injuries were inflicted before or after death, and one which I have fully considered in another work.*

A person about to be attacked with syncope, experiences an indescribable distress, or feeling of faintness; the eyes become dim, and covered with a kind of

* A Manual of Medical Jurisprudence and State Medicine. By M. Ryan, M.D. Second edition.

film; there is a sense of singing or buzzing in the ears, the countenance and lips are pale, the mind fails, and the body is covered with a cold perspiration; the limbs fall as if inert masses, and are unable to support the body; the person falls on the ground or floor; the respiration and pulse disappear, and no sign of external life remains: "*it is momentarily eclipsed.*" Nevertheless, the functions sooner or later return, and life is restored.

Syncope does not continue, in general, longer than a few seconds; but, in some cases, it persists for several minutes. It is not to be confounded with that species of syncope characterized by want of intelligence, which may continue for several hours or days, because the complete absence of the beatings of the heart could not continue so long a time without causing real death.

The feeling of weakness and sinking which usually precedes syncope is not always felt; for some persons experience a feeling full of charms, of sweetness, and almost ravishing delight.

Causes.—The causes of syncope are very various and opposite; as joy and grief, love and hatred, &c. Syncope may be the effect of severe physical pain in any part of the body, or of vivid mental emotions, of sensations produced by the sight of certain objects, by certain sounds, odours, &c. Certain poisons, as narcotics, hydrocyanic acid, septic miasms, or odours; and loss of blood by depletion or hemorrhage, induce the disorder under notice. In fine, great obstacles to the circulation of the blood also suspend the action of the heart, and cause syncope.

Treatment.—When syncope is purely nervous, as in nervous women, there is seldom any danger; the sufferer ought to be placed in the recumbent or horizontal position, on sofa, bed, or on the floor, fresh air admitted, cold water sprinkled on the face and neck, ammonia, hartshorn, burnt feathers, æther, eau de Cologne, vinegar, and a thousand other means in popular use, will be sufficient to restore animation.

The other indication will be to remove the exciting cause, and to improve the general health. (See Dyspepsia, Hysteria, Hypochondriasis, &c.)

IRREGULARITIES AND INTERMITTENCES OF THE PULSATION OF THE HEART.

In my history of the Pulse, I described the natural action of the heart, and its morbid states in the various disorganization of the centre of the circulation, and perhaps in all other diseases. I have now to observe, that the irregularities and intermittences of the pulsations of the heart often arise from the causes which produce nervous palpitations, and will be relieved by the same remedies. They may also depend on organic diseases of the heart, as already described. It is worthy of notice, that the pulse at the wrist and heart may be irregular or intermittent during health, become regular during acute disease, and return to its former condition during convalescence or recovery. For a full disquisition on this subject, see the essay already cited.

M. R.

(To be continued.)

The London Medical
AND
Surgical Journal.

Saturday, April 29th, 1837.

THE QUEEN'S HEALTH.

We regret to state that her Majesty's health has been for a long time past in a delicate condition; and has of late assumed rather a serious character. Besides occasional attacks of hæmoptoe, she has never been free, for some years past, from cough. Until lately she has been entirely under the care and direction both of German and English homœopathists, on whose system she had placed the most perfect confidence and reliance. The exclusion of the *pures*, more particularly of the indefatigable President of the College of Physicians, on such a momentous occasion, has given rise to just cause for serious vexation and distress amongst the Fellows, and, much to their credit, several meetings of the College were held to discuss the propriety of legal measures being adopted by that learned body, to repress so public a demonstration of irregular practice in the case of one of

the highest Personages of the State. If indeed the College of Physicians be empowered by the legislature to punish IRREGULAR PRACTITIONERS in medicine, there could not have been a better opportunity for the learned President and his Council to have come forth in a manly and straight forward manner, and prosecuted the *homœopathic* pretenders, and thus not only claimed their just rights and high privileges as a body incorporated by charter "for the prevention of quackery," but they might have been the indirect means of rescuing the valuable life of an illustrious Personage. This striking fact of the President and Council of the College of Physicians having allowed so favourable, nay, indeed, so palpable an opportunity to pass by unnoticed, of inflicting the utmost rigour of the law on those practitioners, to whom they had not granted one of their *licences*, entitles us to presume that on no future occasion will they ever attempt to enforce their long tottering rights and privileges; and that they will permit *all* kinds of practitioners, regular and irregular, to follow their calling unmolested. We are well aware that some of the more enlightened members of the medical profession are of opinion, that no enactments of the legislature, however judicious, can ever suppress quackery. The case of her most gracious Majesty affords the most incontrovertible evidence of the impossibility of the Government interfering in matters of this description. It ought, indeed, to be recollected, that it is not "the lower orders" of this community who more particularly suffer from quackery; it is the highest and most enlightened members of society who foster and patronize empiricism.

If this opinion of the impossibility that any interference of the legislature be incompetent to suppress QUACKERY, we fear that there is little hope of the efforts of the BRITISH MEDICAL ASSOCIATION, however vigorous, being at all likely to arrest the numerous evils which the community suffer from irregular practitioners. All that the Association can ever effect is by upholding and improving the condition of the regular practitioner, to produce a corresponding depression in the estimation of the *irregular;* but if we consider the constitution of society, we must be convinced, that from the reputation of QUACK DOCTORS, and the cognizance and protection which the law gives to QUACK MEDICINES, it is impossible to conceive how the legislature, far less any association of medical practitioners, can reasonably expect to prevent a system of things, which, at this time in particular, has been receiving the sanction and countenance of one of the most illustrious individuals of this great empire.

THE LATE MR. VANCE.—MEDICO-LEGAL QUESTIONS.

The circumstances which attended the death of this eminent surgeon, must render every tribute to his memory acceptable to his professional brethren; and it is impossible for them not to feel deeply for his fate, as none who are engaged in the practice of medicine are ever exempt from being the victims of a like accident.

Mr. Vance was a native of Ireland, and received the chief part of his medical education in Dublin; after which, in 1792, he entered the British Navy. After having served at sea for nearly fifteen years, and having deservedly acquired much reputation for his talents and zeal in the service of his country, he was appointed surgeon to the Naval Hospital, at Haslar, and afterwards to the Naval Hospital at Painton. Having a second

time served in the Haslar Hospital for a few years, he was, in 1819, appointed surgeon to the Royal Hospital at Greenwich; and after devoting his services in that institution, which is so magnificent a monument of our naval glory, for nearly five years, he retired from the public service, and settled in this metropolis. The high character which he had acquired during his long services in the British Navy, at once secured to him the countenance and support, not only of all those who had derived the benefit of his professional services as a naval officer, but all their friends and connexions flocked to him, seeking his opinion and aid, from the hour of his commencing the practice of his profession in London. From that period until the time of his melancholy death, he continued to enjoy an unusual share of public confidence, which, with economical habits, enabled him to leave not less than the sum of £100,000 to his surviving family. Though Mr. Vance has not left us any records of his useful and successful labours, yet it is well known to those who were personally acquainted with him, that he availed himself of the great opportunities which he had of acquiring knowledge. He paid particular attention to anatomy, which enabled him to accumulate a very valuable collection both of natural and diseased specimens. Mr. Vance expired in the 67th year of his age, leaving a widow and large family to deplore his loss.

The mode by which Mr. Vance met with his untimely end, and which, singular enough, befell, no long period since, M. Pelletan, of Montpellier, is one of serious consideration, and involves medico-legal questions of the highest interest to society at large. It will be recollected that it was first announced through the public press, that an insane person, on whom Mr. Vance was in attendance, escaped the surveillance of his keeper, and struck the deceased with such violence, as to precipitate him down a flight of stairs, which he received a fatal injury on his by head. The patient was immediately conveyed to a lunatic asylum, but on whose authority did not appear. A coroner's inquest was held upon the body of the deceased; and, though the whole of the details of the evidence never reached the public eye, enough transpired to let it be known, that a different opinion existed in the minds of the jury, as to whether the deceased had been *forcibly* thrown down stairs, or had been *accidentally* overthrown by the accused. But previous to the coroner's inquest, there appeared a strange document in all the daily papers, in the form of a letter, from a pupil of the deceased—a Dr. Willis, who does not appear to have been an eye witness, purporting to give an *explanation of the mode* by which Mr. Vance had met with his death; and endeavouring to give the public an impression that in place of the deceased having been attacked and forcibly tumbled headlong down stairs, the perpetrator of the deed had only *accidentally* encountered the deceased on the stairs, and in rushing past him, caused the mortal injury. There was something so unusual in a document of this kind appearing in *all* the newspapers, before a coroner's inquest was held, or any legal investigation of the case took place, that it is impossible not to review the whole of the proceedings connected with the lamentable event, without contemplating the legal questions which they envolve—questions, as we have already said, of vital interest to the community. No evidence has been yet adduced that the perpetrator of the deed was a *lunatic* in the eye of the law, to constitute which, it is imperative that the patient should have been declared to be an insane person on

the authority of the "certificates of two legally competent medical practitioners," and that he should have been placed under the care of proper keepers.

MEDICAL EVIDENCE—GREENACRE'S CASE.

We transcribe the following strictures on the Medical Evidence in Greenacre's case from a cotemporary (*British Annals of Medicine*) which agrees with our own remarks in our last number, as will appear to our readers more strikingly after a perusal of the preceding article in this Journal.

"The evidence *goes* to prove that the parties were on the very best terms within a few hours of the horrid tragedy; the surgeon gave it as his opinion (but we cannot agree with him) that the fatal blow which *destroyed* the right eye was *produced* by the fist. *Here* there was evidence directly in favor of the prisoner. The jury ought not to have brought in a verdict of *murder.* The circumstantial evidence *only* led to *an inference* of *manslaughter. A sack was borrowed, but the murderer required three sacks or bags!!!* It is true the verdict of the jury has *turned out* to be correct, but this is only an *accident.* The evidence did not lead to the conclusion at which they arrived. The evidence of the gentleman who examined the contents of the stomach is by no means satisfactory, judging from the various newspaper reports. Evidence was adduced by the prisoner's counsel to prove that the murdered woman had been inebriated. The evidence states that the fluid in the stomach had a *spirituous* smell. 'With regard to the *spirituous smell,* I came to the conclusion that it was neither *whisky nor rum,* and that it was *gin,* to the best of my belief. I satisfied myself of this by a chemical test.' What the *chemical test* was we are not told. If this gentleman has discovered a *chemical* test for gin in such minute quantity *as must have occurred in this case,* mixed with the heterogeneous fluid matter of the stomach, he has made no contemptible discovery, and will confer no small benefit on his Majesty's revenue if he will only reveal it in the *proper quarter.* Again we are told, 'The quantity of spirits I should say was not sufficient to cause intoxication.' How much spirit was present we are not told. It is, however, absurd to pretend to judge of the *occurrence* of intoxication before death by an examination of the contents of the stomach a fortnight after death. Dr. Christison could not detect the smell of whisky in the stomach of the woman Campbell who died by the hand of the notorious Burke, although she was intoxicated with that liquor half an hour before her death, and the body was examined 38 hours after death. The *apparent decision* (*although in reality great inaccuracy*) of the evidence we have just considered, must have had its effect upon the jury in prejudicing them against the prisoner, in so far as it seemed to make out a proof that the woman could not have been intoxicated. The chemical evidence is therefore highly reprehensible, and ought not to have been delivered before a court of justice, especially when the life of a fellow-creature was implicated. We speak of the evidence which we have seen *in print.* These remarks may appear severe, but they are dictated only by a sense of public utility and a high sense of moral feeling."

PHARMACY IN DUBLIN.

In our Dublin contemporary a most interesting paper is given by Mr. Moore, Apothecary, with a view to estimate the use made of the principal medicines by the most eminent physicians and surgeons of Dublin since the year 1780, to the present time. No person was better qualified to undertake a task of this kind than Mr. Moore; for not only has the establishment over which he presides, and which was commenced by his grandfather, uninterruptedly enjoyed the most extensive support and confidence of the profession and the public, but the writer possesses a persevering industry, added to talents of no mean order. Mr. Moore divides the entire time into three equal portions, and from each of these he takes twelve thousand prescriptions, marking the frequency with which each medicine occurred in them. The general results of the tables thus constructed are as follow.

"Emetics in the first period were given ten times as often as in the second, and twelve times as often as in the last. Formerly, they were given invariably at the onset of a fever, as, according to the prevailing theory of Cullen, they took off the spasm of the extreme vessels. Enemata were prescribed during the last forty years somewhat less than one half as often as during the first twenty. The period when they were most seldom ordered was about the time when Dr.

Hamilton's purging practice was introduced. Their use is now becoming more frequent. Local bleeding has made a gradual and steady progress. Blisters and warm plasters have diminished, and the latter have been partly superseded by stimulating liniments, and other modes of counter-irritation. Tartar emetic was given constantly as an emetic in the first period: but, except as an emetic, it is met with most frequently in the third. Kermes mineral was formerly much used in pneumonia: it has ceased to be employed, but the antimonial and James's powder have increased. The total number of the preparations of antimony is nearly equal in each of the three periods. Opium has kept its ground steadily: its camphorated tincture has fallen almost into disuse. Hyoscyamus is more used, owing to the extract being commonly prescribed in conjunction with blue pill. In the first period the red Peruvian bark was used generally, and in powder. After that, the infusion and tincture of the pale bark; and now sulphate of quinine has in great measure superseded all. Epsom salt has been but recently commonly employed, its place having been formerly supplied by Rochelle salt, sal polychrest, and the sulphate of soda. Nitre has fallen into comparative disuse. Blue pill was found seventeen times in the first period, thirty-nine in the second, and 156 in the third; owing to Abernethy's recommendation. The use of mercurial ointment in frictions has much diminished. Jalap has decreased, and rhubarb increased. Ipecacuanha is used much more at present than formerly. Fifty years ago blisters were seldom dressed with simple ointment, or allowed to heal soon; basilicon or an ointment of trifolium melilotus was employed."

The Editors of the British Foreign Medical Review, v. *R. Carmichael, Author of the Essay on the Origin and Nature of Tuberculous and Cancerous Diseases.*

TO THE EDITOR OF THE LONDON MEDICAL AND SURGICAL JOURNAL.

Sir,—In the last number (vi.) of the above Journal appears a review of the above Essay; upon which I beg you will insert a few observations, as, happening to be present at the reading of it to the Medical Section of the British Association, I must admit that the novel views it contained made the impression upon my mind that the Author, to use a homely phrase, "had hit the right nail on the head," when he attributed an independent vitality to those masses of animal matter which contribute to that class of diseases hitherto deemed malignant and incurable, and aptly compared them to the parasitic fungi which grow upon the decaying surfaces of trees and vegetables.

I shall consider the Reviewer's objections seriatem, passing over the first page, which consists of a preliminary discourse of truisms that nobody will deny, and obviously meant as a rhetorical flourish to the cut and thrust attacks which follow.

The first assault upon our Author is that he has taken his views respecting the nature of tubercle almost exclusively from the phenomena which he supposes it to present in a *single* organ, viz. the lungs, and then he proceeds a little further on to observe, "that if Mr. Carmichael will forget what he has imagined he has learned from his examination of tubercles of the lungs, and look at this morbid product in the pelvis of the kidneys, ureters, fallopian tubes, cavity of the uterus, and other hollow organs, or in the artificial cavities, such as those formed in bone, in *lumbar abscess*, or in *lymphatic glands*; in all of which situations this substance occurs in masses of various extent, and presenting all the characters which pathologists regard as constituting the *type* of this product, he will agree with us that he has hitherto been strangely deceived; for he will perceive here nothing like 'semi-transparent grey vesicles,' or 'regular compact masses like grains of shot.' He will only perceive a cheesy looking substance of various consistence, having no *elementary* form, even when examined in the microscope. It is merely in juxtaposition with the surface which had secreted it, or lies detached from it like so much foreign matter or refuse, which the lining tissues could not appropriate for the purposes of nutrition."

To these objections I merely reply, that in various parts of Mr. Carmichael's Essay he not only considers tubercles of the lungs, but those of most other organs, and even in a brochure necessarily so brief, he introduces several instances of their presence in the viscera of the abdomen and other parts of the frame. The cheesy looking substance of various consistence, without elementary form, Mr. Carmichael contends only appears in

tubercles after they have passed into transmutation, similar to those which hydatids are known to undergo; and until Dr. Carswell can account for the regularity and formed appearance of the grey semi transparent tubercles, so well described by Laennec, as well as those other solid ones which are compact, rounded, insulated, medullary looking bodies, I positively deny the position that he has "satisfactorily demonstrated, that tubercle is an amorphus product, essentially composed of an unorganizable substance," consequently having "no form but that which is impressed upon it by the influence of the mechanical and physical condition under which it happens to be placed;" and when we consider that those regularly formed bodies have no connexion by means of vessels with the tissues in which they are found, I am inclined to an opinion directly the reverse of Dr. Carswell. According to Mr. Carmichael's views, tubercles, like hydatids, (acknowledged Entozoa) pass through various transmutations, in which they lose all figure and form; they also, by their increase spread into each other, so as to present the appearance of an amorphous product, such as may be found in the "pelvis of the kidneys, ureters, fallopian tubes, cavity of the uterus, and other hollow organs." Hydatids, when they pass into the solid state, lose all traces of their original form and organization, and actually become compressed and moulded into shapes dependent "upon the mechanical and physical condition under which they happen to be placed," and in the analogous transmutations which tubercles undergo we find a satisfactory explanation of the amorphous heterogeneous misshapen masses which they present in some instances, while the defined and regularly organized appearance which they display in others before transmutation is thus no less satisfactorily explained.

Mr. Carmichael certainly in no part of his Essay speaks of tuberculous matter being found "in lumbar abscess or in lymphatic scrofulous glands;" for he distinctly considers the curdy matter of scrofulous abscesses as altogether different from the brainlike substance of which tubercle and other morbid growths of a malignant character is so generally composed. The consideration of the identity of these substances belongs to Drs. Carswell, Clarke, Todd, and others of the Carswell school. Mr. C., however, while he states his dissent from this doctrine, candidly admits that the scrofulous constitution is one predisposed to tuberculous formations. He says, "I have constantly observed that those persons who have suffered from scrofula in infancy and youth, are the most liable in mature and advanced age to cancerous complaints:" but, surely, this circumstance does not prove the identity of scrofula and cancer.

The Reviewer next charges Mr. Carmichael with committing "a serious mistake in not making a distinction between two THINGS, the one possessing *vital properties* and the other a *distinct* or *separate animal existence*." Now I really cannot discover the serious mistake which is thus laid at the author's door. His object was to advocate the independent vitality of tubercles, and to prove that they had a separate existence from the animal bodies in which they grow, and not to show that they are a part and parcel of those bodies, "possessing in a low degree some vital property."

After the reviewer has found fault with what he terms Mr. Carmichael's definitions and anatomical descriptions of tubercles, which would appear to any unsophisticated mind not meant for either, but mere passing observations, expressive of his belief in their independent vitality and transmutation when their vitality ceases. The reviewer indulges his critical acumen in the following effusion: "Now although we think that we have already shown the fallacy of the definition and description of the anatomical characters of tubercles, such as we have quoted it from Mr. Carmichael's Essay, we cannot avoid stating that his definition is a mere assumption, which can derive no countenance from the anatomical characters of the supposed animal to which it is applied. He does not even afford us the satisfaction of telling us what means he employed to ascertain their anatomical characters. Indeed, he is not, as we have already said, very clear on this point; for he talks of their being semi-transparent vesicles or opaque vesicles, and concludes by saying, that they are in fact thickened vesicles or cysts; nay, he is determined to have them animals, whatever appearance they present, even should they resemble grains of shot; for, he adds, by way, we presume, of removing every possible objection, 'I do not see why their solidity should be an objection to their possession of an independent vitality.' It need hardly be observed, that such dubious language and such

loose reasoning is unworthy of serious consideration. A pathologist claims the attributes of vitality and independent existence for a thing which he cannot bring before our senses under any definite form! or, rather, which he represents as possessing no essential elementary *material character!*"

In order to answer this unfair and garbled representation of Mr. Carmichael's opinions and statements, I shall briefly subjoin what they manifestly are, as collected *passim* from his Essay.

The diseases under consideration Mr. Carmichael considers may arise either in the form of hydatids, or in that of a solid medullary substance. That in neither shape have they any communication by means of vessels with the parts in which they are embedded, as is proved by injection, but that both the one and the other are generally enveloped in a cyst or covering, varying in density from the consistence of a serous membrane to that of cartilage, which receives vessels from the surrounding tissues, and is, therefore, an integral part of the body infested by the parasite; and that this envelope serves the purpose of insulating, and at the same time restraining the growth and multiplication of the Entozooa which it surrounds.

In this plain description of the bodies for which Mr. Carmichael claims the faculty of individual existence, surely we have sufficient of "*definite form* and *material character*" to satisfy any mind but that of a prejudiced partisan, or a wilfully blind reviewer.

The next point in Mr. Carmichael's Essay discanted on by the reviewer, and appears of any consequence, is the observation that "as long as they (tubercles) retain life, they do not occasion any stimulus or disturbance in the parts in which they have their nidus to throw them off." This observation of the author's is illustrated by the well known fact concerning the guinea worm, (vena medinensis) that as long as this entozoon retains life, it does not excite inflammation in the solid tissues in which it is lodged, but when deprived of life, that it then, and not till then, gives the stimulus of an extraneous body, and thus excites that suppuration by which it is ejected. Mr. Carmichael did not say, that living worms do not excite pain, he could not have the hardihood and folly of contradicting the universal experience of mankind, nor could the reviewer have misunderstood him with any other object than that of introducing a useless and vapid dissertation which fills nearly page 380, in order to show that intestinal worms and other parasites while alive may excite pain, convulsions, and even death. It is quite unnecessary to make any observation upon this gratuitous and common-place labour, as Mr. Carmichael never asserted the contrary.

The reviewer next enters into a long disquisition to show that Mr. Carmichael mistook the meaning of Doctors Carswell, Clarke, and Todd, when they argued for the identity of "scrofula and tubercle." They do not maintain, he continues, "that *scrofula* is identical with *tubercle;* for scrofula implies the disease, tubercle its substantive product. Scrofula, or the tubercular diathesis, may exist without the presence of the latter. Hence we speak of scrofulous glands as indices or manifestations of the tubercular diathesis, but not as tubercles; although actual anatomical observation has shown that such glands, either *before* they have suffered much enlargement or inflammation, or *after* they have been for an indefinite period the seat of chronic inflammation, *always contain a greater or less quantity of tuberculous matter.*"

Now, in no page of Mr. Carmichael's Essay has he urged against these gentlemen that they argued for the identity of the "Disease Scrofula, with its substantive product Tubercle." This sample of stupidity could scarcely have originated in the brain of a disinterested Reviewer, but in pages 8, 9, 10, of Mr. Carmichael's Essay, we find quotations from the works of Doctors Carswell, Clarke, and R. B. Todd, stating their belief in the identity of tuberculous and scrofulous matter; and even the Reviewer himself, by the words in italics, has shown that Mr. Carmichael was not wrong in the obvious construction of the passages in question. And here I trust to be excused for stating, that in my humble apprehension Mr. Carmichael's view of the nature of tubercles in the lungs, accounts more satisfactorily for the phenomena of the disease and its incurable nature, than the doctrine that they are unorganizable scrofulous depositions. In his prefatory remarks we find, that so far from considering his essay on the subject as complete, he states his intention of following up the investigation "by availing himself of every opportunity which offers of post mortem examinations of examining animals which die of tuberculous diseases, and of extending his experiments upon living animals, in order

to ascertain how far unhealthy regimen is capable of producing tubercles, and of learning, if possible, whether they are capable of absorption by a change to a healthy regimen, which engages the important question, whether or no tuberculous diseases admit of a cure; and he finally hopes that others, unbiassed by pre-conceived notions, will favour those views by pursuing the same interesting investigation." This modest announcement might, we think, have disarmed his Reviewer of a portion of the venom, when he accuses Mr. Carmichael of giving "incomplete and inaccurate views on a most important subject for the instruction of the profession."

"The only other misinterpretation," the Reviewer next urges, "on the part of Mr. Carmichael, to which we shall allude, is in reference to the influence of inflammation in the production of tubercle. "How will Doctor Carswell reconcile," says Mr. Carmichael, "the two following passages. At page 267* we read as follows: 'Under such circumstances it would be absurd to ascribe the origin of tuberculous matter to inflammation;' and after arguing (continues Mr. Carmichael) the identity of scrofula and tuberculous diseases, we find, at page 259, the following observations: 'Inflammation of any organ may be followed by the deposition of tuberculous matter in that organ in the manner in which we have already explained. We have frequent examples of the subcutaneous glands of the neck, and submaxillary glands, becoming tuberculous after an acute attack of inflammation, although previously neither enlarged, indurated, nor otherwise diseased.' We are surprised that Mr. Carmichael should call upon Dr. Carswell to reconcile statements the meaning of which is so obvious, and so consonant with the doctrines which this pathologist entertains on the nature and origin of tubercles."

Surely it must be acknowledged by any one who understands the English language, that Doctor Carswell contradicts himself in these two quotations. But it is only fair to give the Reviewer's explanation of it. "Doctor Carswell has (he continues), we conceive, throughout all his writings on this subject, consistently maintained, and satisfactorily demonstrated, that it would be absurd to attempt to ascribe the origin of tuberculous matter to inflammation, whilst, at the same time, he has no less satisfactorily explained, and, we think, beautifully illustrated, the manner in which this pathological state operates locally, as a *remote* or *exciting* cause of tubercular depositions. Believing, as Doctor Carswell does, that tuberculous matter is separated by a process of secretion from the blood, he considers that the *localization* of the disease, or *presence* of this substance in a particular organ, or portion of an organ, is not only frequently determined by the supervention of inflammation, but would not, in many cases, take place, had this local morbid condition not occurred. Hence he does not admit that inflammation is necessary to the formation and deposition of tuberculous matter, but that, as it gives rise to an accumulation of blood, and consequently to an increase of secretion, in the part which it affects, it is frequently followed by the deposition of tuberculous matter; that change of the constitution termed tubercular diathesis, *previously existing*, without the modifying influence of which, the products of inflammation would have been those by which it is characterised in other or ordinary circumstances, viz., coagulable lymph, or pus."

To this laboured explanation to reconcile two contradictory statements, I answer, that the influence of inflammation in causing peculiar depositions, which, on Doctor Carswell's own hypothesis, might take place equally well without it, is a mere assumption without proof, and contrary to every thing we know of the constitution of animals, either in health or disease. It is an assumption manifestly brought forward for the purpose of propping up a lame and impotent theory respecting the identity of scrofulous and tuberculous matters. Doctor Carswell might as well assert that the heterogeneous mass of which fungus hematodes is composed, is deposited on various organs at the same time, in consequence of a fungoid "diathesis" previously existing, but that occasionally inflammation will act as a "*remote* or *exciting cause*" of these depositions in a constitution thus predisposed.

Verily, Dr. Carswell had better, in prudence, seek a more able or skilful hand to extricate him, when he again happens to give two contradictory statements, or plunges on the horns of such a dilemma.

The next objection to our author is one of the greatest importance, because it is not a matter of opinion that is questioned, but a matter of fact. "Mr. Carmichael (continues the Reviewer) says that there is in every carcinomatous structure two distinct

* Cyclopœdia Pract. Med., vol. iv.

substances. One is a hard cartilaginous mass, which admits of being injected; the other is of the consistence of brain, or a medullary substance, which does *not* admit of being injected. The latter I esteem the true entozooa, or parasite; the former, i.e. the cartilaginous part, I look upon as the barrier which the surrounding tissues throw up to insulate the parasite."

"We should like to know (says the Reviewer) what such pathologists as Andral, Cruveilhier, Lobstein, and Carswell, would say of this description of carcinoma;" and then, after overwhelming him with this host of authorities, proceeds to deny the accuracy of Mr. Carmichael's statements, and to pronounce them the very reverse of the fact, viz., that the cartilaginous part does not admit of being injected, while the medullary part does; nay, that so rich in blood is this substance occasionally, that it is almost as red as blood; and this not from hæmorrhage, but from the presence of the aggregated multitudes of the fine capillary vessels which constitute a part of its organization, and that medullary sarcoma, or fungus hæmatode, is as obviously organised as the brain or cerebral substance which it resembles."

This is a bold assertion of our critic, but since *he* screens himself under the mysterious and secret mantle of a reviewer I conceive that Doctor John Forbes, and Doctor John Conolly, editors of the British and Foreign Quarterly Medical Review, ought to call upon that scribe to show those preparations in which he has seen fungus hæmatodes, and the medullary substance of a cancerous mass injected, while the cartilaginous portion remained uninjected, rather than lie under the imputation of misguiding the public respecting a fact of so great importance.

As I was present at the reading of Mr. Carmichael's paper, I recollect his showing several preparations of cancer to illustrate his view of the subject, since which time I have examined several collections of morbid anatomy, and every thing I have seen confirms me in the opinion that he is right, and, consequently, that the reviewer is wrong.

Having now pursued this wily fox in a fair sportsman-like manner through all his windings and turnings, till I have fairly run him down, I shall not make use of my indisputable power over him, but carefully bag him for future amusement, should the animal have strength and courage to afford us another day's sport. But to be serious, I shall, in his own words, "take my leave of him; and if the tone in which I have treated him should appear to carry with it more than merited censure, I seek no other grounds of justification than those I have already offered, viz., the importance of the subject," and the necessity of exposing the selfish drifts of that numerous class of scribes who are always at hand, for a trifling consideration, or the mean desire of pleasing a patron, to pander their talents for the support of those who in their turn can afford them a lifting hand to ascend the ladder of professional reputation.

I have indicated sufficiently the gross partiality of this critic in his errors of commission. Now for his errors of omission. A fair reviewer, one who was anxious not only to do justice to the public, but to the author, would be happy to have it in his power to give the meed of his approbation to the latter whenever a fair opportunity occurs. But the critique in question is one extended mesh of censure, without a single word of approbation. Were I the reviewer, I should have seized with pleasure upon the opportunity of doing justice to an author, whose just rights were assailed by surreptious attempts to rob him of his claim to priority of discovery. Thus Mr. Carmichael's views relative to the connexion of scrofula and derangement of the digestive organs, published in a work on that disease in 1810, have been filched from him without any acknowledgment, and even the subject treated under the following headings in which he had previously considered it: 1st, improper diet; 2nd, impure air; 3rd, deficient exercise; 4th, mperfect clothing; 5th, exenthe mata, all stated by him to be as exciting causes of that disease. Since that period those views have been enlarged and expanded upon by others, without any acknowledgment of the source from which the information has been derived. I would, however, *en passant*, advise the authors who borrow largely without acknowledging the debt, in future to take those liberties only with the dead, and not with the living; for the latter may, perchance, as in the present instance, lay claim to their legitimate property.

As the publication in which the review appeared is but young, not having as yet acquired the eagle flight and strength of older journals, I would, in the soft language of Mr. Junks, the boatswain, beg to insinuate to its editors, in the most delicate way in the world, that *it* may

neither acquire the strength or flight of its seniors, if it so soon begins to follow the polluted courses which only long established publications can venture to pursue with impunity, or at least without the dread of immediate punishment. I shall not farther imitate our friend, the boatswain's energetic habits of following up his *suaviter in modo*, by *the fortiter in re*, and inflict blows after flattering with blandishments; but merely suggest that whether Doctor Carswell's views or Mr. Carmichael's, are those founded in truth and nature, it signifies but little what the reviewer may do to the *support* of the one or the *extinction* of the other, for *magna est veritas et prevalebit*.

JUSTUS.

FAMILY CORRESPONDENCE.

Great Russell Street,
Oct. 18th, 1836.

My dearest Father,—I received your's of the 8th, and was delighted to find that my darling mother and all at Killballymacalogue were as well as when I left them. You cannot imagine the state of anxiety I have been in since I last wrote to you, about selecting the school and hospital to attend; and late as it is now in the first month of the season, I have only just entered. I hear, however, from every one that so long as a pupil does not pay away his money, there is no fear of his being refused to enter even if the season was half over, for they are all so very avaricious in this place. I have been to many of the introductory lectures, and have paid most particular attention to the inducements held out by the several speakers in recommending their school, so that I was on the point of entering to St. Bartholomew's Hospital School after hearing Mr. Lawrence's opening lecture; but keeping your advice, I thought it best to sleep upon the matter, and the following morning, having had the good luck to find the honorable Mr. Wakley at home, I consulted him; when you may judge my surprise upon histelling me, that Lawrence delivered the same lecture ten years ago, and has been in the habit of repeating it every year since, to his own knowledge; and besides, that his lectures were published in the Lancet, taken verbatim by his own reporter, Mr. M'Christie, the best in Europe: and that Mr. Stanley, the surgeon, who has a great memory, entertained a party after dinner, a few weeks ago, at his own house, by repeating verbatim more than half of Lawrence's introductory compliments to the students, and all the usual *palaver*. This at once decided me in having any thing to do with St. Bartholomew's.

I next day heard Dr. Charpie, at the Gower Street University College, but he was very nervous and agitated, and his confusion, together with a strong Scotch brogue, made me not catch half what he said. The little I did pick up, was to the effect, that "it was his first appearance in London, that he was engaged in Edinburgh by our friend, Dick Quain, to come up and supply the place of Professor Doctor Quain, who retired in disgust on account of some fraternal professional persecutions; that he would do his best, and that the best could do no more." There certainly was a great degree of honesty and earnestness about the Speaker's manner, notwithstanding his confusion, which strangely contrasted with a demonstration I heard in the morning from Professor Quain, upon the os coccygis. Upon the whole, I thought it best to look about me further.

Understanding that Mr. Howship the rectum doctor was to open the medical school at the Charing Cross Hospital by an introductory lecture at seven o'clock, P. M. I swallowed a hasty dinner at the Italian eating house, Cranborne Alley, near the hospital, which is a very respectable place to dine at, and where, although it costs something more, there is no danger of meeting low company, and found myself seated in the theatre with five other students, two of whom were apprentices of the notorious Mr. Van Butchell; there were also present Mr. Van Butchell himself, who is, I understand, patronized by Mr. Wakley, and three others of his fraternity. Immediately opposite to where I sat was a plaister-of-Paris bust, which I was told was a likeness of the director, a Doctor Goolding. A few minutes after the time Mr. Howship, accompanied by five or six others, made his appearance, and begged he would be excused from taking off his hat, as he had a bad cold, but I heard after, from an apprentice of his who sat next me, that he always got his hair curled for all great occasions of this kind, and being in a great hurry and confusion, the barber set fire to one side of his head, and singed nearly all the hairs off. I spoke to him after he had finished, and he certainly had a burnt smell. He very kindly asked

me home to tea, where I met the other officers of the hospital, and from the many inducements they held out to me to enter to the hospital practice, I did so, and paid my money. I enclose you a printed list of the fees for attendance at the several hospitals, and you will perceive the Charing Cross is very cheap, and I am also promised a dressership and house surgeoncy without any additional fee. It was most fortunate I was not in a hurry to enter to a school when I first came to London, for the inducements held out by the Medical School of the Greville Street Free Hospital are so very great, and the fees so exceedingly small, that without hesitation I entered to it *perpetual*. The fee to everything, you will perceive, is only twenty-one pounds, and we are to have comparative anatomy in the summer, natural philosophy, botany, and clinical observations upon homœopathy, which is a new method of practice by which the greatest saving in drugs will be achieved: and the drugging system practice, which is very prevalent in London, completely done up. You will perceive that one of the lecturers is a *Cantab*, and the other an *Oxon;* all the *corruptionists*, as the hon. member for Finsbury calls them, are now tacking these titles to their names, in addition to the M. D., which marks them as being perfectly distinct from the learned and liberal individuals, who form the metropolitan university. I have only seen Mr. Wakley once, he must be a very great man, for it is impossible to catch him at home. I hear he is all in all with Sir Astley Cooper, and that he and Bransby have made friends. Mr. Liston is also very intimate with him.

My money is nearly out, having paid for lectures and hospital; please send me a remittance as soon as possible. I am afraid I must quit my present lodgings, as the landlady imposes very much upon me; half a pound of tea only lasted me a week, and you know I was never partial to it except at breakfast; and, besides, there are a great many extra charges which I never calculated upon. Would you approve of my joining a young Scotch student, from Edinburgh? we could, as it is called here, "chum" together; he is a very clever young fellow, and attends the King's College.

Tell aunt Sarah it is impossible to procure the *everlasting* darning needles; when I asked the shopkeepers for them here, they all appeared quite ignorant of such things; and one of them had the impudence to ask me what she wanted *two* of them for, when *one* would last for ever.

I must now conclude, dearest father; give my affectionate love to all at home, and let me hear from you soon, and a *double* letter. I'll pay every attention to my studies, and do every thing you desire.

Ever dear father,
Your affectionate son,
THOMAS.

P. S. I wanted to get in a hurry to Guy's Hospital last week, and got into a *Bus*, but forgot to ask which road it took, and in forty minutes I found myself at Greenwich, which was very provoking, as I lost a capital operation.

HOMŒOPATHY.

TO THE EDITOR OF THE LONDON MEDICAL AND SURGICAL JOURNAL.

Sir,—As I, the individual referred to in the last number of your Journal, under the feigned name of "Fritzback," am now practising homœopathic medicine in London, I feel myself called upon to trouble you with a few remarks in reply to the Review.

I am constrained to admit that the *old women* constituting the French Academy of Medicine, have from the basest of all, namely, pecuniary motives, denounced this true and only rational system of treatment. I will farther concede that the remedies prescribed for the *gastronomic valet* and the *concupiscent chambermaid* were in strict accordance with the wholesome doctrines expounded by our illustrious founder, Hahnemann, in his "Organon;" a work, which like its prototype, the Novum Organon of Lord Bacon, shall survive when the ponderous volumes by which it has been overlaid, have sunk by their own weight into the dead sea of oblivion.

But, sir, when alluding to the fundamental experiment of the Doctor, the authors seem unaware of the grand principle of innoculating the *materies morbi*. To this point I solicit your attention, and hope to have the honour of submitting to you several authentic cures I have thereby wrought; I shall only instance one at present. The son of an eminent butcher at Whitechapel, laboured for more than twenty years under epilepsy; the paroxysms observing lunar periods. He had consulted the most skilful members of the faculty in London, but without deriving more than temporary benefit.

Having been requested by his disconsolate parents to see the youth, I did so; and have to inform you that, after a few doses of the saliva of a sheep affected with *staggers*, he has been permanently cured.

I am, sir,
Your obedient servant,
HOMŒOPATHICUS (verus).

Great Russell-st., London,
April 24, 1837.

MISCELLANEOUS

MEDICAL BOTANY.

COMMUNICATED WITH THE VIEW OF CALLING THE ATTENTION OF NATURALISTS TO THE MEDICINAL PROPERTIES OF PLANTS.

By Dr. CASTLE.

XVI.
FEBRIFUGE ESENBECKIA.

This tree, the *Esenbeckia febrifuga* of St. Hilaire (Evodia febrifuga *St. Hil. fl. bras.* 1. *p.* 79.) belongs to *Pentandria Monogynia* of Linnæus, and to De Candolle's natural order *Rubaceæ*. In height it is about forty feet, common in the province of Minas Geraes in Brazil, where it is vernacularly called *Larangeia do Mato* and *Tres Folhas virmelhas*. The leaves are alternate, trifoliate; the leaflets lanceolate elliptic, entire, rather acuminated, and full of pellucid dots. The flowers, which are full of glandular dots, are disposed in terminal, pubescent panicles; calyx five-parted, permanent; petals five, spreading, inserted into the disk; stamens five, inserted with the petals, shorter and alternating with them; filaments oval-shaped, smooth; anthers heart-shaped; ovary sessile, simple, warted, five-lobed, five-celled; styles five, connected together, rising from between the lobes of the ovary, and terminating in a somewhat headed stigma. The bark of the tree is tonic and febrifuge, and is used in Brazil as a substitute for Peruvian bark, to which, it is said to be by no means inferior. BIB. REF.—*St. Hil. pl. usuel. bras. t.* 4.

XVII.
GUIANA SIMABA.

The *Simaba Guianensis* of Aublet (Zwingera amara, *Willd.*) is an ornamental shrub frequent in the woods of Guiana. It belongs to *Decandria Monogynia* of Linnæus, and to the natural order *Simarubeæ* of De Candolle. In the stove-house of this country it attains the height of about eight feet. The leaves are alternate and impari-pinnate, with one or two pairs of oval-oblong leaflets, taper-pointed at both ends, and emarginate at the apex. The flowers are white, usually four-cleft, and disposed in axillary racemes; calyx small, four or five-parted, much shorter than the spreading petals; stamens ten; ovaries generally equal in number to the petals; styles distant at the base, but connected at the top. The fruit is drupaceous. In its sensible medical properties the Simaba bears considerable affinity to the Quassia and Simaruba trees. The bark, leaves, and fruit are bitter, and may be applied to the same purposes as the products of the trees alluded to. It was introduced in 1826; but is not much cultivated. BIB. REF.—*Aubl. Guian.* 1. *p.* 400. *t.* 153.

XVIII.
ETHIOPIAN OR NEGRO PEPPER.

This shrub, the *Unona Æthiopica* of Dunal, is a native of Ethiopia and Sierra Leone, belonging to *Polyandria, Polygynia* of Linnæus, and to the natural order *Anonaceæ* of De Candolle. The stem varies in its height. The leaves are quite entire, ovate-lanceolate, acute, smooth, with the under surface glaucous. The flowers are situated on peduncles; the calyx consists of three or four sepals; petals six, disposed in a ternary order, with the three inner ones smallest; stamens indefinite; carpels numerous, baccate, terrete, and nearly sessile, many-seeded; and the seeds themselves disposed in a single row. The capsules or seeds are very aromatic and pungent, and were formerly in request under the commercial synonymes of *Negro pepper, Monkey pepper, Ethiopian pepper, Grains de Zelim, Guinea pepper, and Piper Æthiopicum;* latterly they have not been much used, except to impart their flavour to different liquors. The shrub was introduced into our stove-houses in 1822, but it does not appear to have matured either the fruit or the flowers. BIB. REF.—*Dun. mon. anon. p.* 113.

FRENCH PATENT FOR COPIVI.—M. Mothes, a French Pharmacian, is about to obtain a patent for the gelatinous capsules of Copivi. The invention consists in forming a muco-gelatinous envelope round a few drops of the balsam, whereby its nauseous taste is covered.—*Bull. de l'Institut., Mars* 31.

REVIEWS.

An Anylysis of the British Ferns and their allies, with copper-plate engravings of every species and variety. By George W. Francis, Esq., Lecturer on Botany at the North London School of Medicine.

We need only quote the preface of this production to show the high claims of the author as a botanist; and we can assure our readers that the work is ably executed, and is a valuable accession to the botanist's library.

"This motto was my governing principle in writing the following work on the British Ferns and their allies, and in adopting it I hope that I shall neither be accused of arrogance, neglect of the opinion of others, nor yet of unnecessarily varying the details of science. Should the reader ask why I write at all; I answer, because the only book ever published upon this subject (Bolton's Filices Britannicæ) has long been out of print, and so much difference of opinion exists as to the identity of some species, and the arrangement of others, that I thought a plain and practical synopsis like the present would be useful to the tyro at least, if not to the practical Botanist.

"The materials from which it has been compiled are these: I inspected all the Herbaria to which I had access, gathered wild and cultivated fronds wherever I could procure them, and wrote to most of our first-rate Botanists for specimens, remarks, and habitats: all these being collected, arranged, and studied, they were described and engraved without reference to any series of plates or descriptions whatever. I then collated these with the works of Linnæus, Willdenow, Sprengel, Swartz, Pursh, Withering, Smith, Hooker, Lightfoot, Hudson, &c. &c., and wherever there was a difference between myself and others, I searched again for the truth; and if still in doubt, have been careful to record the disparity.

"The long introductory matter explains all that is known of the internal structure not only of the indigenous species, but of foreign also, and as it tends to induce in the mind a philosophical knowledge of the plants afterwards detailed, I flatter myself that the part devoted to this will not be the least valuable to the student of nature.

"The manner in which the object has been accomplished, it is necessary to explain more in detail; and first, as to the illustrative plates. They are small, for the sake of economy, and are intended chiefly to indicate the habit of the plants, while the magnified parts show their detail. They might have been finer as works of art; but, had they been executed by an engraver, minute as they are, they would perhaps have been less botanically accurate, as the smallest variation in many of them would materially have altered their character; and therefore, although a first and an untutored attempt at etching, I have preferred executing them myself, especially as by so doing I should save a large expense, perhaps not to be refunded by the sale of the work. The plate of Genera is a new feature in illustration, and it is hoped a useful one.

"In the record and detail of species, the following order is observed:—First, the Latin and English name, and reference to figure; secondly, those essential characters which alone are necessary for discriminating the species, and which alone the true botanist will find it convenient to consult. The Synonymes and references to figures in other works which follow, give a history of the plant, and enable the student to refer elsewhere if in doubt. The description may be considered collateral evidence, while the remaining parts will show him the varieties to which his plant is subject, the cause of them, its particular and general distribution, and the peculiarities attached to it.

"In the part of the work which treats of the Genera, the reader will find, first, the derivation of the Genus, and a concise account of its general characteristics, and under it the arrangement of the species, according to their obvious distinctions.

"In the Essential Characters of the different species, as few words as possible have been used, and those few pure and scientific. In The Synonymes, which go back to the time of Linnæus (or in some few instances a little before), the names of authors only are given, unless they have called a plant by different names in different of their works, when the works themselves are also specified. In the descriptive part, and discriminating remarks which follow it, pure scientific detail has not been so much aimed at as obvious differences and popular observations. The habitats have been collected from every authentic source which was attainable by me; a vast number will be found which have not been recorded before, and those few which are contained in previous publications, have most of them been lately authenticated.

"Information of this varied and local kind cannot, of course, be expected from any one's unassisted labours; I have therefore had recourse in the latter part to the assitance of friends, and I cannot speak too highly of the kindness and warmth with which my advances have been received, and without which indeed very much interesting matter must of necessity have been omitted. I hope that I have acknowledged in every instance the remarks thus received. My obligations are particularly due to H. C. Watson, Esq., who very kindly left out of his new Botanist's Guide any account of the Ferns, on the purpose that I might benefit by his checked lists; also for the valuable remarks of Mr. W. Wilson, Mr. W. Leighton, Dr. Murray, Mr. W. Pamplin, Mr. Beevis, Dr. Castles, and Rev. W. Bree.

"And now, kind reader, I leave the work in your hands, concluding with the words of Linnæus to Haller:—'If you have remarked errors in me, your superior wisdom must pardon them. Who errs not while preambulating the domains of nature? Who can observe every thing with accuracy? Correct me as a friend, and I as a friend will requite the kindness.'"

Memoire sur l'Emploe des Preparations d'Argent dans le Traitement des Maladies Veneriennes, 1836, par M. SERRE, Professeur de Clinique Chirurgicale a la Faculte de Montpellier, &c. &c.

The author has tried, it seems, the simple chloride of silver, the ammonio-chloride, the oxide of silver, the silver in a state of minute division, the cyanide and iodide of silver. He finds the simple chloride and the ammoniaco-chloride, however, to be the two most certain and efficacious preparations. He administers them in pills according to the following formula:

℞. Pulv. iridis Florent gr. ij.
Argenti Ammon. Chlor. gr. j.
Conserv. Tiliæ. q. s.
M. et divide in pil. xii. vel. xiv.

He begins with the tenth or eighth of a grain of simple chloride, without the least inconvenience; but has never ordered at the commencement more than the twelfth of a grain of the ammonio-chloride. The doses are progressively augmented during the treatment. M. Serre thinks it better to apply the medicine by friction on the tongue than in pills.

He has related twenty-two cases of *chancres, vegetations, rhagades, pustules*, cured by this method of treatment. It never induces salivation, nor exercises any bad effect on the digestive tube or pulmonary organs, like mercury. It is besides less expensive than the preparations of gold sometimes prescribed in venereal complaints.

M. Serre deserves credit for his researches; the results of which we hasten to make known to the Medical Profession of this country.

LITERARY INTELLIGENCE.

Experiments on the Physiology of Comparative and Human Generation, with an account of Ovology and Embryology from the lowest to the highest classes of Mammiferous Animals, illustrated by numerous Plates drawn from original dissections, by John Miller, Mechanic and self-taught Student of Comparative and Human Anatomy; with the Life of the Author, by himself. To be published in 8vo. in October 1837, by subscription, to be paid for on delivery of the work.

CHARING CROSS AND WESTMINSTER HOSPITALS.

"It's an ill wind that blows nobody any good."

The funds of the Westminster Hospital have been much benefited by the late disturbance at the Charing Cross Hospital, many of the subscribers having transferred their annual donations to the former *real* charity; and it is with pleasure we are enabled to state that an extra spacious ward has been lately opened, and that in the course of the ensuing week a second ward will be ready for the reception of patients. The number of patients now in the Hospital, amounts to upwards of 120.

THE UNIVERSITY COLLEGE.

GENERAL AND CLINICAL SURGERY.

Sir,—In the hope that your numerous readers will be gratified to learn, I beg to inform you that the whole arrangements for the completion of the Surgical Course at University College are at length arranged. The operations will be performed in a complete and somewhat novel method by Professor Richard Quain, whilst the principles of Surgical Science, and the propriety and necessity of performing

each operation will continue to be fully explained and established by Professor Cooper. The pupil will therefore, without any additional fee, have a double advantage. The operations will commence at the toe, and be carried on progressively upwards to the occipito atlantal articulation, according to a *scale of time*, as laid down by Mr. Liston, an outline of which I have only yet seen in the hands of a pupil: the following is a copy.

Great toe, 1 minute—Little ditto, 40 seconds—Intermediate ditto, 45 to 50 seconds—Metatarsus, 4½ minutes (Chopart); 1 minute, 42 seconds (Liston)—Amputation below knee, (Flaps) 2½ minutes; (Circular) 5 minutes—Hip Joint, undecided—Penis, 1 second—Lower Jaw, 23 minutes—Upper ditto, 26 minutes—Both Jaws, 30 minutes.

The operations of the upper extremity run in the same gradation, according to size, as in the inferior limbs.

Passing the catheter with both hands, 3 minutes—With one hand, 65 seconds—Lithotomy not to exceed one minute—Lithotripsy, time unlimited.

Your constant reader,

A Pupil.

TO CORRESPONDENTS.

We have to apologize to several correspondents for not noticing their communications last week for want of room.

A North London Student.—The observations upon the itch insect are quite fabulous, and are too ridiculous to insert in this journal.

W. W.—The letter thus signed is left for the writer, agreeable to his wish, at our office. If he will consult our 25th number for last year, he will find all his opinions anticipated.

Z. will find one grain of aloes act on the bowels in the case alluded to as freely as a larger doze.

A Defrauded Student.—The nearest Police Magistrate will give proper advice under the circumstances. A letter to the Council of the Royal College of Surgeons, and another to the Court of Examiners of the Society of Apothecaries, stating the circumstances, would have a wonderful effect.

Mica Panis.—The Whiting loaves ought to be analysed.

A Disappointed King's College Student.—The attack, though justifiable, is much too personal. A letter to the College of Surgeons, and another to the Hall, would act as powerful stimulants.

A Charing Cross Pupil.—The communication, though we believe it perfectly true, cannot be inserted. It containts at least six libels—"for the greater the truth, the greater the libel." Shade of Bentham!

A King's College Medical Student.—This letter is too personal. "The contemptible puppy" alluded too will meet with his deserts at Charing Cross.

Medicus.—It is not prudent in criminal cases for the medical witness to publish his opinions before the trial in a court of law.

Justus.—The suggestions will be duly attended to.

A Plucked Author.—Our correspondent was grossly imposed on by his publisher. His only recourse is an appeal to a court of law.

T.—The parties concerned withdrew their connexion immediately after the exposition.

Elector.—The communication relating to *Wesminster* politics is not adapted for our pages; we wish to confine this Journal to the exposure of medical abuses, unconnected with electioneering intrigues.

Calculator.—The Lectures which have been delivered both by Sir Benjamin Brodie and Mr. Guthrie, these individuals were compelled not to charge any fee for, in order to prevent their being charged with *favoritism* when employed as examiners at Lincoln's Inn Fields. Under other circumstances, there is no reason to suppose that these highly exemplary individuals would not have received an honorarium.

North Staffordshire Infirmary.—Mr. Lawrence, consistent with his well known *liberal* principles, and in accordance with the opinions he has so emphatically and so long declared publicly, has just brought forward a motion before the Council of Lincoln's Inn Fields, seconded by Mr. Howship, that in imitation of Richter, of Gottingen, and Scarpa, of Pavia, all hospitals for clinical instruction, containing at least FIFTEEN beds should be considered fully adequate for instruction of students, and duly recognised accordingly.

Cantab.—There is no difference in the comparative value of an Oxford and a German degree. Dr. —— and the —— can give every information.

A Sufferer.—The veratria will not afford the slightest relief. A combination of hyoscyamus and opium is sometimes useful in such cases.

THE

London Medical and Surgical Journal.

No. V. SATURDAY MAY 6. Vol. I.—(1837.)

NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXI.

VOLUNTARY MOTION.

Mark of a well-formed Foot—Cause and Advantage of the Foot being turned out—Peculiarities of Gait in Females—Walking up and down Hill—Difference between walking and running—Progression of drunken Persons—Leaping—Swimming—Flying—Flight of Squirrels and Fish—Walking up perpendicular Rocks—Lizards and Walruses—Dancing—Singing—Playing—Striking—Muscles not voluntary—Difference between Tremors and Convulsions—Tonicity of Muscles—Experiments on Muscular Contractions—Experiments of Gilbert Blane, Abernethey, and Magendie—Causes of the Loss of Power in the Contraction of Muscles—Gordon and Edwards on muscular Contraction—Electrical Theory of Prevost and Dumas—Brodie's Experiment—Snoring—Gaping—Hiccough—Hooping—Coughing—Blowing the Nose—Groaning—Screaming—Whispering—Hydrocephalus and Hysteria—Different musical Instruments which the Larynx resembles—Sobbing—Laughing—Crying—Ventriloquism—Absurdity of the Name of Alison's Theory—True Explanation—Mastication—Motions subservient to Generation—Erection of the Penis—Parturition—Different Stages of Labour—Separation of the Placenta—Retention of the Placenta—Magendie's Remedy—Fall of the Umbilical Cord—Sleep—Nature of Incubus and Somnambulism—Cullen and Blumenbach on Sleep—Difference between Sleep and Apoplexy—Pressure on the Brain—Syncope—Phrenitis—Best time of resolving Difficulties, and learning Languages—Astonishing Rapidity of Thought in Sleep, and Insanity—Difference between Insanity and Delirium—General Observations—Plan of the Courses—Extent of the Subject—Physiology, Etiology, Semiology, and Therapeutics—Theory of Medicine—Its Relations with the other Medical Sciences—Necessity of a specific Course of Lectures on Physiology.

A high instep is a mark of a well-formed foot. The muscles which rotate the thigh outward, being stronger than those which rotate it inward, the toe is naturally turned a little outward; and this seems necessary in order to bring the ball of the great toe to the ground in such a position as to make it a fulcrum for poising the body. Women walk either less firmly than men, or with a rolling motion. In walking, especially up a hill, the extensors of the thigh and foot are most fatigued; for they have to pull up the body, first on the knee, and then on the foot. In coming down a hill, the muscles of the back are most fatigued; for they have to keep up the body, in opposition to its tendency to fall on the nose. We use the flexors most in running, and the extensors in walking; and if fatigued by running, therefore, we straighten the limbs; but if tired by walking, we bend them. A sharp walk is less fatiguing than a slow one; because it gives the body a greater projectile force, and the *vis inertiæ* becomes a substitute for muscular exertion. Hence a drunken man runs, when he cannot walk; for in walking, each step requires a fresh volition; while in running, the foot is instinctively thrown forward, to prevent the body from falling.

Leaping is performed by a sudden extension of the lower limbs, after flexion; thus imparting to the body the force of a projectile; and swimming is a leap in the water. A man thrown overboard in deep water, does not sink to the bottom; for,

at a certain depth, it is as impossible for him to sink as it would be in mercury. I have seen a fat man (who could not swim by art) fall into the Thames several times, but it was impossible for him to sink. The great quantity of fat in the head of whales tends to keeps it above water. Fish in water, under an exhausted receiver, remain at the surface in spite of themselves. Magendie says, that swimming is performed by renewing the column of water under the body, before the first column has time to be displaced. He considers that flying is performed in the same way, by renewing the column of air. Some squirrels can fly by means of membranes attached to the lower extremities as well as the upper. Some fish also have the power of flying, by means of membranous expansions.

The way in which lizards crawl up a perpendicular surface is by forming a vacuum with the foot, in the same way as flies. The walrus crawls up rocks in the same way, producing a vacuum by drawing the toes together, and then expanding the foot.

If a man dances, sings, and plays a musical instrument at the same time, it is said that he calls into exercise three hundred muscles at once. In striking a blow, we first pull back and bend the arm, and then project and straighten it. There are no really voluntary muscles in the body; for we cannot will to move any particular muscles. We can only will certain motions; and therefore motion is voluntary. Volition is not the immediate stimulus to motion; but calls into play an irritation of the anterior spinal column, where grey matter is found. Other stimuli acting on these columns may likewise produce motion. Motion may sometimes result, perhaps, from increased relaxation. Thus a tremor is from diminished action, and approximates to palsy; while a convulsion is from increased action, and approximates to spasm. When the jaw chatters, it is from tremor, produced by the relaxation of the masseter, temporal, and other muscles.

The muscles are always contracted in some degree, as is proved by the mouth being drawn to the healthy side in hemiphlegia; and by the limbs being bent during sleep, from the flexors being stronger than the extensors. When the muscles contract, they gain in thickness what they lose in length; so that probably their density remains the same. Various experiments have been made to determine this point. Sir Gilbert Blane put a living eel into a flask, into the neck of which he then fixed a capillary tube, and filled the whole with water up to a certain height of the latter. During the contortions of the eel, when the muscles must have been violently contracted, the height of the water in the capillary tube was not affected. In this case, however, when one set of muscles contracted, another set was relaxed; so that the effects of each were mutually counterbalanced. Abernethey put his arm into water, and then contracted the muscles; but this would diminish the supply of blood to the limb, and thus interfere with the accuracy of the experiment. Magendie says that the point is not settled; but that the difference between the size of muscles when contracted and when relaxed is so trifling as not to be worth regarding.

There is a loss of power in the contraction of the muscles, from the following circumstances:—1. From their acting on the principle of the worst form of a lever of the third kind. 2. From the oblique direction in which the fibres of the muscle are inserted into the tendon. 3. From the obliquity of the whole muscle to the bone. 4. From friction. 5. From the resistance of antagonist muscles. 6. From the muscles acting with the same power on fixed and on moveable points, which occasion a loss of half the power. If the muscles of the body were so placed as to have their full power, a man might move Arthur's Seat. The advantages which counterbalance this loss of power in the muscles, are,—1. Symmetry. 2. Celerity. 3. Accuracy. The muscles of speech afford the best example of symmetry; and those of the voice of celerity. Weights hung to muscles removed from the body do not indicate their strength, but their cohesion. The former depends on nervous energy, and therefore cannot be estimated in this way. It must be in proportion to their length, breadth, and extent of motion.

Gordon and Edwards say that muscles do not assume a zigzag form in contracting. Prevost and Dumas are of opinion that the fibres of the nerves enter the muscles transeversely to the fibres of the latter; and that the fibres of the nerves are approximated by the nervous power, which they think is galvanism, and that in this manner the muscles are shortened. Brodie found that cutting the nerve of a part did not destroy its power of muscular contraction, upon the application of the galvanic stimulus, but

that cutting the artery did destroy its power of contracting. He concludes, therefore, that the contraction of a muscle depends on the influx of blood into it. But it is only while a part is furnished with blood, that its irritibility continues, and if, while in that state, a stimulus be applied, contraction ensues.

Snoring is occasioned by a tremour of the velum pendulum palati. It occurs after fatigue, and is an approximation to paralysis. Gaping is a convulsive sigh. The lower jaw is depressed from sympathy between the portio dura and the phrenic nerve. Hence it occurs in diseases of the diaphragm. The foregoing take place during the inspiration; the following during expiration. Hiccough is a spasmodic sigh. Hooping depends on the diaphragm also, but in connection with a contracted glottis. Coughing and blowing the nose are of the same nature. There is first a resistance to the exit of the air, and then a forcible expiration. A person cannot cough after tracheotomy, because the latter prevents this, previous resistance being made. The diaphragm is passive in expiration. A groan is an inverted hoop, and frequently does not indicate pain, but a convulsive action of the muscles of the larynx. A scream is an acute groan, the arytœnoid muscles closing the rima glottidis more than in a groan. Hydrocephalus causes screaming from the convulsions spreading to the muscles of the larynx, and not from pain. The person who utters the scream may even be completely unconscious, as in hysteria, where the scream is not caused by the passions as usual, but by other causes affecting the nervous system. The constriction of the vocal cords by the thyro-arytœnoid muscles, instead of their approximation, makes the difference between whispering and speaking.

The larynx has been compared by different authors to various musical instruments. 1. By Galen to a flute. 2. By Ferris to a violin. 3. By Richerand to a mixture of both. 4. By Magendie to a clarionet. 5. By Dodat to a horn. 6. By Blumenbach to an Eolian harp. 7. By Krantsenstein to a drum. It seems to combine the advantages of all, being both a wind and a stringed instrument, and therefore cannot be imitated. Sobbing, laughing, and crying are convulsive actions of the abdominal muscles, and those of the larynx.

Ventriloquism is said by Dr. Alison and others to be speaking during inspiration. But if you watch closely, you will see that the lips do not move, and that the chest gets smaller, which proves that expiration is taking place. The explanation appears to me to be this: ventriloquists do with their tongue what others do with their lips; and in them the portio dura probably extends farther back than in others. Ventriloquism was once absurdly thought to be caused by the concussion of the omentum and the abdominal muscles: hence its name.

In mastication, the jaw is raised by the masseter and temporal muscles, and is depressed by the muscles which extend between it and the os hyoides, for the muscles which raise the os hyoides depress the jaw. When the larynx is raised, the vocal tube is shortened, and the voice rendered more acute. The jaw is protruded by the external pterigoid muscle, and rotated by the internal pterigoid.

V. *Motions subservient to generation.*—The penis is erected by retention of blood, not by increased determination. De Graff said the blood was retained by the penis being pressed against the pubes; but erection rather depresses the penis, and the erector penis would rather impede the flow of arterial blood into the organ, by embracing the crura penis. Erection, like blushing, seems to be produced by relaxation and not by compression. The vessels are first constricted by a stimulus and then relaxed from fatigue.

Parturition requires the assistance of the voluntary muscles; for a prolapsed uterus will not bring forth. However, the assistance of the voluntary muscles is not always necessary, for parturition has sometimes occurred after the death of the parent, by means of the muscles of organic life. Labour has five stages. 1. The opening of the os uteri. 2. The passage of the head through the vagina. 3. The birth of the head. 4. The birth of the body. 5. The birth of the placenta. The child has its face first to the sacro-illiac synchondrosis, then to the hollow of the sacrum, and when born, it turns to one of the thighs. The placenta is separated by the muscular fibres which surround the mouths of the fallopian tubes. In order to separate the retained placenta, Magendie recommends that cold water, mixed with vinegar, should be injected through the vein of the umbilical cord. The shriveling of this cord which takes place after birth, is a vital process, analogous to the fall of the leaf, or to dry gangrene. A dead child does not cast its cord, which becomes putrid.

SLEEP.

Sleep is not a function, but a diminution of the three functions of which we have last treated,—sensation, thought, and voluntary motion. In incubus, in which sensation is alive, but voluntary motion perverted, the anterior columns of the spinal cord are probably asleep, and the posterior columns awake. In somnambulism, in which voluntary motion is alive, but sensation is perverted, the anterior columns probably are awake, and the posterior asleep. Both incubus and somnambulism are kinds of half sleep.

Cullen said that sleep was occasioned by diminished mobility of the nervous power; others are of opinion that it is caused by pressure on the brain; but we know not how this can come on periodically. Blumenbach says it is from a deficiency of blood in the brain. The grey matter is subservient to sensation, thought and voluntary motion; and if there be too little blood in the brain, too little grey matter will be deposited, and there will be a less display of these animal functions. It is true that in apoplexy, which resembles sleep, there is too much blood; but probably, in that case, it is in the white matter, while there is too little in the grey, for as the brain is incompressible, if there be a redundancy of blood in one part, there will be a deficiency in another. Pressure on the brain, from fracture of the skull, with depression, acts in the same way, by squeezing out the blood. On the same principles, syncope and tieing the carotid artery produce sleep. In phrenitis, where there is too much blood in the grey matter, sensation, thought, and voluntary motion are much increased. It is said the thoughts are more energetic when the body is in the recumbent posture, and more vivid on awakening in the morning. Erasmus said that was the best time for learning a language, and I have found it the best time for mastering difficulties.

In sleep thoughts succeed each other much more rapidly than when we are awake. To so great an extent is this the case, that Darwin says the events of two hundred years may be comprised in the dream of half a minute. The same takes place in insanity. In both of these cases there is no judgment to arrest the thoughts. In insanity the patient understands a question put to him, but the thought which it awakens serves as the first link of a chain, and he travels over half the globe before he can reply. Insanity differs from delirium, for in the latter the patient does not understand the question. If you awaken a person, that very act may give rise to a very long dream in an interval of time quite inappreciable.

Dr. Fletcher's Course of Lectures on the Institutions of Medicine (as may be seen by referring to the Syllabus, published in our Sixth Volume, No. 146, page 487; and No. 147, page 519), consisted of four divisions: 1. Physiology. 2. Etiology. 3. Semiology. 4. Therapeutics. We have now gone through the first of these divisions; and before entering on the others we intend to wind up the physiological part of the course with some general observations by Dr. Fletcher, delivered as an introduction to a previous course.

GENERAL OBSERVATIONS.

It is my design to deliver, in this Course of Lectures, the best description in my power; first, of the several processes going on in the living human body during health; secondly, of the influence upon it of those agents by which diseases are occasioned; thirdly, of the changes observable, as well in the aspect of the body, as in the processes going on within it during disease; and, lastly, of the influence upon it of those agents by which health is restored. A very great part of such explanations being necessarily theoretical, they constitute (collectively taken) the theory or institutions of medicine, or full physiology; the consideration of the first part forming the proper business of elementary physiology, or physiology properly so called; that of the second, of etiology; that of the third, of semeiology; and that of the fourth, of therapeutics.

It is obvious that the theory of medicine is connected, more or less intimately, with almost every other branch of medical science; and is taught, more or less fully, by the several professors of each of those branches. The lecturer on anatomy, for example, is almost compelled to intersperse with his descriptions of the various parts of the body, some disquisitions respecting their functions and diseases; the lecturers on the practice of physic and surgery, can hardly enumerate the causes of diseases, their symptoms and treatment, without entering occasionally into some explanations of the nature and operation of the first (the causes of disease), the immediate cause of the second (the symptoms), and the mode of action of the last (the treat-

ment); and the lecturer on the materia medica is still more frequently induced to interweave with descriptions of the properties of medicines, some rationale of their beneficial effects. Still, to each of the lecturers just mentioned, the discussion of any one of the topics alluded to, is more or less a work of supererogation. They are indeed so far connected with their immediate business, as to be with difficulty altogether avoided; but at the same time so far estranged from it, as to be omitted without any imputation of neglect. Hence they are commonly touched upon by each, only by fits and starts, without any attempt at a regular system; and the student is thus led, by different professors, perhaps a dozen times through some paths of the extensive district before him; while into others equally interesting, and abounding with equally useful productions, he never enters at all, and is in all likelihood unconscious of their existence. But instructed in this imperfect and desultory way—even admitting (what is very improbable) that the teachers of so many different sciences, all inculcated the same views of matters out of the immediate province of any one of them—it is evidently impossible that the student can attain a comprehensive knowledge of the subjects in question; and it is, at the same time, very improbable that he will attain a true knowledge of them, even as far as they go. For the most part they are brought forward by these volunteer teachers (as they may be termed), with that air of indifference, and, perhaps, of half real, half affected contempt, which men generally display when alluding to subjects not exactly in their own line, and are indeed seldom introduced at all, except when a particularly happy idea has been accidentally stumbled upon; and as the lecturer feels himself under no obligation to prosecute this idea any further than he finds convenient, he is at once cut off from the chief and almost only criterion of its justice. Any person at all versed in the theory of medicine will agree with me when I assert, that it is easy for a man of ingenuity to make any one of twenty different explanations of the same fact, appear equally satisfactory to the uninitiated; and it is only when collated with others, that the hollowness of perhaps the most feasible of them becomes obvious. "The application of particulars to a whole," says Cullen, "will often discover their fallacy;" but the off-and-on teachers of the theory of medicine never apply their speculations to the whole, but to parts only; and the consequence is, that their theories are not only imperfect as a system, but frequently false in detail.

It was to remedy these imperfections in the system of medical education, that courses of lectures professedly on the theory or institutions of medicine were first established; and attendance on such a course was subsequently made an essential qualification for a medical or surgical diploma. In such a course it is understood that the lecturer, while he is obliged to presume that his hearers are acquainted with at least all the broader facts of anatomy, of the practice of physic and surgery, and of the materia medica, and subservient sciences (although he may find himself obliged occasionally to invade some of these departments in illustration of his own), will carry them systematically and in detail, through every important principle of physiology, pathology, and therapeutics; and in such a manner as that one and the same spirit may pervade all his explanations, and that each may be tried, as it is successively offered, by the ordeal of all that have preceded. It is in this way alone, that a comprehensive and consistent system of the theory of medicine, or full physiology, can be conveyed; and it is such a system alone that can be generally useful, or is at all entitled to rank among the medical sciences.

It is not, however, quite superfluous to inquire whether theory, in whatever way it may be prosecuted or inculcated, is of any real utility in medicine; and whether it be not a flickering and unsteady glimmer, adapted merely to amuse the practical man (if not to mislead him), and to retard him on his way to reputation and fortune (if not to divest him from them altogether), instead of being a real and substantial luminary, calculated to light him on the road to success. It is rather too late in our times to revive the old and tiresome contest, whether the practice of the healing art should be strictly dogmatical, or entirely empirical; a contest which, in the minds of all intelligent persons, was long ago settled by the decision that should be neither the one nor the other; but that theory and experience should be regarded in the light, not of adversaries, but of allies; and should be made to co-operate, instead of being adduced in opposition to each other.

LECTURES ON SURGERY,

BY

JOHN HUNTER, F.R.S.

Animal and Vegetable Matter—Origin and Return to Inanimate Matter—Peculiar Properties—Propagation of Species—Physical and Chemical Properties—Morbid Alterations—Information to be Derived from them.

Animal and vegetable matter has certainly been formed out of the matter of the globe, for we find it returning to it again. Both are subject to the laws already mentioned, which regulate common matter, but they are so different, from their peculiar modification, as to appear at first like originally distinct species of matter; though they will be found, on investigation, to be only a new modification of matter.

This change in the original principles of matter seems to be equally distinct both in animal and vegetable matter, and the first principle of action of those two substances seems to be in great measure the same; but there are marks by which they can be distinguished. The connexion of these two modifications of matter with common matter has never yet been traced, nor has the gradual transition from one to the other been imagined; and if those substances had not reverted into common matter by their decomposition, it never could have been suspected that they were originally composed of the same materials. For these reasons they have been ranked by themselves.

Animal and vegetable substances differ from common matter in possessing an additional power, totally different from any other known property of matter, from which various new properties arise.

Animals and vegetables have a power of action within themselves, are capable of increasing their own magnitude, and possess the power, as it were, of working themselves into form and a higher state of existence. This power of action and capability of increase require a supply of materials, as well for the increase as for the waste arising from action. This supply appears not to be wholly the same in both, though perhaps it may be. The idea of a supply always supposes a resource distinct from the thing supplied, and no waste parts can ever perfectly revert into the thing itself without first going through all the changes which first brought it into its natural state.

This supply is furnished by the materials of the globe. Vegetables alone appear to have a power of immediately converting common matter into their own kind. Animals probably have not that power, therefore are removed further from common matter; so that a vegetable seems an intermediate step between common matter and animal matter. But observation will show that vegetables can readily convert both animal and vegetable matter into their own substance, as in the case of dung, which increases the natural growth of plants.

Both have a power of propagating their kinds by a production out of themselves, by which means the stock is replenished.

Both are capable of being in two states; one of these is the living state, which we have been considering, the other is the dead state.

Hence both animals and vegetables are capable of being considered in three ways. 1st, In their power of continuance and production, when possessed of their natural powers of action or life. 2nd, In their chemical nature as matter, which can only be considered when they are dead. 3rd, In their decay, or spontaneous reduction to common matter, when life is gone. In all these operations they are totally different from common matter. The first distinction, or life, in which consists the power of self-preservation, is the antidote to the two last, since before either of these can take place the whole part must be deprived of the living principle. When in the first state, their actions are either natural, the whole being in harmony, and every part acting in concert with the rest, which is called health; or they are unnatural, which constitutes disease, the tendency of which is to destroy the whole.

When chemically considered, both animal and vegetable matter are found to be acted on by different substances, or are capable of solution in other bodies, as concentrated acids, alkalies, &c., in which respect they are pretty similar to one another. Both are capable of being acted on by fire; but in this process we find each yielding some substances peculiar to itself; animal matter when distilled yields water, volatile alkali, empyreumatic oil, and calcareous earth;—besides these there is a small proportion of iron, which does not appear, however, to be a constituent part of the whole animal body, being chiefly procurable from the blood; a small proportion of other

substances may also be found in the blood.

During their decay, both animals and vegetables go through a series of regular spontaneous changes, the succeeding one arising entirely out of the first, and the next out of this, until the whole return to common matter from whence they arose, for they must return to the earth from whence they were produced. In this natural process we find animals and vegetables yield many substances not to be found in them before these changes, also not be found in common matter. This process I call fermentation, and it is peculiar, I believe, to vegetable and animal matter.

The processes carried on by chemistry and fermentation, which can only take place when the parts are dead, have been introduced by physiologists into the living œconomy; and, not satisfied with this, they have brought in mechanics to account for many of the operations of vegetables and animals. But, for the purpose of distinguishing more accurately between mechanical, chemical, and vital operations, and the circumstances under which the two first are applied to the living body, let us consider them a little further.

The actions and productions of actions both in vegetable and animal bodies, have been hitherto considered so much under the prepossessions of chemical and mechanical philosophy, that physiologists have entirely lost sight of life; and perhaps they have been led to this mode of reasoning because these properties are much more familiar, more adapted to our understandings, and more demonstrable than the living properties of organized beings. But unless we consider life as the immediate cause of all actions occurring either in animals or vegetables, we can have no just conception of either vegetable or animal matter. No wonder, then, that the theories of the older physiologists are ill built and ill supported, their principles being false. Many of the effects, both in animals and vegetables, might at first sight appear to be chemical, or the consequence of fermentation. The production of many juices of plants, such as gums, acids, sugar, &c., would seem to be of this kind; but all arise from natural actions of the vegetable, and do not belong to chemistry. No chemist in the world can make out of the earth a piece of sugar, but a vegetable can do it. Digestion, the formation of the blood, and all the secretions of an animal, might at first appear to be of this sort; but that they really are not chemical products I am clearly convinced. If an ingenious man undertook to account for every change in matter by fermentation, there is no change in nature that might not be brought within his definition. The living principle itself would be shown to arise from fermentation; brain, muscles, bones would grow from fermentation, since they are all formed from the blood, and yet the blood is not found in them.—Of all things on the face of the earth definitions are the most cursed; for if you make a definition you may bring together under it a thousand things that have not the least connection with it.

What I call fermentation, only takes place in animal and vegetable matter when dead. It is that change which takes place in the substances themselves out of their own spontaneity, without any external assistance. Chemistry is a kind of force on things to decompose them. In the process of fermentation, vegetable matter goes through intermediate stages, in which it is neither vegetable nor common matter; the same with animal matter during putrefaction. But in all the productions of a living animal or vegetable, the substances produced are animal or vegetable matter. The only substance produced in an animal which cannot be called animal matter is the earthy matter of bones, and of some diseased parts: it appears also that, in some of the secretions of animals, the products produced have none of the original properties of animal matter, as the sugar of milk, the bitter principle in the bile, these not having been found in any of the natural solids or fluids by any process whatever. But this does not come up to my notion of fermentation, for no process of fermentation of animal or vegetable matter ever produced either one or the other; and even in vegetables, where sugar seems to constitute part of the plant, it is formed by the action of the vegetable. If ever any matter is formed in one of the juices secreted in some part of a vegetable or animal body similar to what arises from fermentation, we may depend on it it arose from that process, but we may also depend on it that there is a defect of the living principle in those cases.

The conversion of water into vegetables, which is vegetation, or of vegetable and animal matter into animals, which is animalization, is not a change taking place according to the nature of the substance, but is effected by the actions of the

vegetable or animal. The different juices formed from the blood, called secretions, differ not from the nature of the blood as animal matter, all giving nearly the same substances when analysed, or subjected to fermentation. Nor can the substances formed in a vegetable be formed, by any process that we know of, from water. We might suppose that fermentation would produce an animal from a vegetable, because in this change "a decomposition of matter and a new combination" are effected; but fermentation never could bring back dead animal or vegetable matter to living, so that it does not correspond to the above definition which has been given of it. This single circumstance throws more light on the power of the stomach than we are yet aware of, for dead matter subjected to it is not obliged to undergo any change as matter, but goes through that process which produces life.

In treating of an animal body I shall always consider its operations, or the causes of all its effects, as arising from the principle of life, and lay it down as a rule that no chemical or mechanical property can become the first cause of any of the effects in the machine. But as all animals have form and motion, which motion is directed by that form, these motions become mechanical, so that every motion may be truly called mechanical. Mechanics are therefore introduced into the machine for many purposes. The living principle, however, in itself is not in the least mechanical, neither does it arise from, nor is it in the least connected with, any mechanical principle.

Having thus given a general idea of these singular combinations of matter, I shall now confine myself to animal matter. But before I treat of the diseases of the animal body, which is the intention of these lectures, it will be necessary to give such general ideas of the subject, and to lay down such axioms and propositions, as will enable you to follow me through all the necessary descriptions of preternatural actions of the machine. This matter we must consider in two points of view: 1st, in its production; 2ndly, in its continuance. This leads me into a new field, and exhibits properties very different from all the other properties of matter. It will be necessary, I say, to have clear and distinct ideas of the difference between animate and inanimate matter, in order to know when and where the animal principle acts, and when other principles are employed in an animal body in accomplishing all the different purposes of life. The human body is what I mean chiefly to treat of; but I shall often find it necessary to illustrate some of the propositions which I shall lay down from animals of an inferior order, in which the principles may be more distinct and less blended with others, or where the parts are differently constructed, in order to show from many varieties of structure, and from many different considerations, what are the uses of the same parts in man; or at least to show that they are not for the uses which have been commonly assigned to them; and as man is the most complicated part of the whole animal creation, it will be proper in the first place to point out general principles common to all this species of matter, that I may be better understood when I come to the more complicated machine, namely, the human. Besides having recourse to many of the inferior orders of animals for the elucidation of some of the phenomena of the more complicated orders, we are also obliged to disease for many of our hints on the animal œconomy, or for explaining the actions of parts, for the wrong action of a part often points out what the natural action was, and gives an idea of life. Disease often corrects our imagination and opinions, and shows us that such and such parts cannot have the uses commonly attributed to them, and therefore brings us a step towards the knowledge of the true use. Monstrosities contribute to rectify our opinions in the same, if not in a more intelligible manner. A monster is either from a deficiency of parts which can be produced from art (and often is from necessity, as in operations,) or else from a modification caused by a wrong arrangement or construction of parts, which will produce an unnatural action, by which means the natural action may be known.

DISEASES OF THE HEART.

(Continued from p. 108, No. 4.)

CHANGES IN THE DIMENSIONS OF THE CAVITIES AND ORIFICES OF THE HEART.

Dilatations of the heart were termed aneurisms by authors until a recent period; the one species was called active, which was dilatation with hypertrophy,

the other species was termed passive, which consisted of dilatation, with thinness of the parietes.

Dilatation of the cavities and orifices of the heart may be *general* or *partial*, and accompanied by thickening or thinning of the parietes. Dilatation with thickening constitutes aneurismal or excentric hypertrophy, which was formerly termed active aneurism or hypertrophy. Dilatation with thinning of the parietes was termed passive aneurism. Cases are recorded in which the right cavities of the heart were prodigiously dilated and thinned, and the auricle appeared similar to a transparent membrane. (Fleury, Bouillaud.)

Dilatation may affect one, many, or the whole of the cavities of the heart, and may or may not be accompanied by hypertrophy, or thinning of the extended parietes. In some cases, when complicated with hypertrophy, the heart becomes double or treble its ordinary size, and may become more or less irregular in form and situation.

Partial dilatation of the heart is sometimes preceded by rupture of the internal layers of the parietes of the organ, which is followed by the formation of an aneurismal cyst. The most frequent dilatation is observed in the pulmonary portion of the right ventricle.

Dilatation of the orifices of the heart. M. Bouillaud describes cases in which the auriculo-ventricular orifice was four, and in one case five inches in circumference. It is evident that in such cases the valves cannot perform their functions properly, and there must be more or less derangement of the action of the heart during the passage of the blood through it.

The cavities of the heart, like all hollow organs, dilate when there is any impediment to the course of the blood or other substance, which is to pass through them. Thus in bad stricture of the urethra, the bladder enlarges, in contraction of the pylorus, the stomach enlarges; and in stricture of the intestine, the tube increases in size above the obstruction. In the same manner the valves of the heart are diseased and offer obstruction to the passage of the blood, the cavity above them becomes enlarged as the accumulation of blood distends its parietes. It is also important to state that the auricles more readily dilate than the ventricles, and that the right ventricle more readily than the left. The auricle is distended when the auriculo-ventricular opening is contracted, and the ventricle when the arterial valves are affected. But it often happens, on account of the difference of resistance in the different cavities of the heart, that the cavity nearest to the obstacle is not always the first which is dilated. Thus when the aortic valves are diseased, the left auricle is often dilated before the left ventricle. It is also to be remembered that the different cavities of the heart which are closely connected with each other, are often dilated by any great obstacle to the course of the blood through them. Besides the mechanical force, the blood possesses an excitant and irritant power, in consequence of which the nutrition of the heart becomes frequently increased, so that the same cause of obstruction to the circulation will not only cause dilatation, but hypertrophy. But if hypertrophy does not ensue, the contractility of the heart will be more easily overcome by the dilating power, and the circulation will be greatly diminished and impeded. Hypertrophy is not a constant complication with dilatation of the heart, and in many cases the dilated parietes are thinned, and to this disease the term passive aneurism was applied by Corvisart.

Causes.—The causes of dilatations, or aneurisms of the heart are all violent exercises and all trades which require powerful muscular exertion. Thus porters, wheel-wrights, paviours, &c., are often affected with this disease. All such causes tend to accumulate the blood in the heart. Powerful mental emotions, such as anger, hatred, jealously, grief, &c., and the occupations which require the expression of the passions, as those of the tragic actor, the vehement orator, &c. are causes of dilatations of the heart.

Among the causes are deviations of the spine and all vices of confirmation, tight lacing, &c., which diminish the capacity of the chest, and the latter compressing the abdomen and impeding respiration and circulation, induces passive congestions of blood, or determination of blood to the brain, lungs, heart, followed by serous effusion, and often accompanied by a sense of suffocation.

Diagnosis and treatment.—The diagnosis has been given in the accounts of hypertrophy and atrophy of the heart and endocarditis. It is now only necessary to observe that when the valves do not completely close the orifices to which they are attached, there will be a reflux of blood which will cause the bruits, termed de soufflet, de cataire, and when

the obstruction is in the left auriculo-ventricular opening, it gives rise to pulsation of the veins, and to fluctuation in the jugular veins. (See endocarditis.) While writing this article, I have a most remarkable case of this kind under my care at the Metropolitan Free Hospital, which is now greatly relieved by the use of the hydriodate of potass, in combination with digatalis, colchicum, the sedative solution of opium and hydrocyanic acid.

The *treatment* is the same as for hypertrophy and atrophy of the heart, as already described.

CONTRACTION OF THE CAVITIES AND ORIFICES OF THE HEART.

These diseases are caused by thickening of the endocardium, (see endocarditis) and especially of the fleshy columns and deep-seated muscular layers, by compression of tumours, effusions, &c. on the heart, and the presence of sanguine concretions, whether recent, chronic, or organized. Contractions of the cavities of the heart impede the circulation and give rise to venous congestions, serous effusions, or dropsies in the different parts of the body. If the contraction occupies the left ventricle, the pulse will be small, as if the aortic orifice was affected. The contractions of the valves and orifices arise from the same cause, which is endocarditis, the treatment of which has been already described. In addition to the usual depletory measures, great advantage will be derived after the acute form of the disease has passed by, from the use of the hydriodate of potass in gradually repeated doses, leaving an interval of ten or twelve days between the period of augmenting the quantity.

I am in the habit of employing the following combination with great benefit in hypertrophy of the heart, induration of its valves, in chronic rheumatism, with enlargement of the joints, in nodes and secondary syphilis.

℞ Potassæ Hydriodatis ʒj. jss. ij. ijss. iij. iijss. iiij;
Aquæ Menthæ Pip. ℥vij;
Vini Colchici ʒj. jss;
Liquoris Opii Sedativ. ʒj;
Tinct. Digitalis ʒj;
Dosis ℥ss. 3 in die.

The digitalis is omitted, except in certain cardiac diseases, and the hydriodate should be gradually increased to the maximum dose, which few can bear, though M. Magendie has strongly advised it.*

PHYSICAL AND MECHANICAL LESIONS OF THE HEART.

The solutions of continuity of the heart may be spontaneous or traumatic, or caused by cutting instruments.

Ruptures of the heart are caused by ulcerations, or the bursting of ameurismal tumours of this organ, and they appear to affect the left cavities more frequently than the right, in the proportion of six of the left and four of the right, into ten cases. (Bouillaud.) In the last four cases it was the auricle that gave way. In four of the first six cases the rupture occurred in the wall of the left ventricle; in one case it affected the mitral valve, and in another the columns of the ventricle. In none of the ten cases were the interventricular and interauricular walls affected. In some cases there is one, in others there are two, three, or five ruptures. (Ollivier, Rostan, Morgagni, Portal, Bland, &c.)

Causes.—The causes of rupture of the heart are predisposing and exciting. The predisposing are ramollissement, or softening, thinning, abscess, or ulceration. The exciting causes are violent concusions of the body in general, or of the heart; violent and sudden efforts, and in some cases the exertion of walking, riding, laughing, coughing, sneezing, &c.

The mechanism of rupture of the heart is the same as that of the stomach, uterus, liver, certain muscles, &c. Mr. Allan Burns was the first who explained that rupture of the heart might be caused by violent action of the organ, in the same way as that of the womb during very violent expulsive contractions, during difficult parturitions.

Symptoms and diagnosis.—When the ruptures of the heart are extensive, there will be a sudden effusion of blood into the pericardium, and in some cases the patient dies as suddenly as if struck with a thunderbolt. M. Rostan describes a case of rupture, in which a coagulum stopped the opening, prevented copious hæmorrhage and sudden death. When the rupture is situated in the partition of the ventricles and the auricles, there will be a mixture of black and red blood, and

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* See my Medico Chirurgical Formulary, 1837; and also my Practical Formulary of European and American Hospitals, second edition, 1836.

according to some authors, cyanosis, or the blue disease, will be produced.

In other cases there may be rupture of the fleshy columns, valvular tendons or valves, and then there will be more or less disorder of the circulation. MM. Bouillaud and Tarral state there may be a simple or a sibilant bruit de soufflet; but the former author has heard it when no such lesion existed.

Ruptures of the parietes of the heart with effusion of blood into the pericardium are necessarily fatal. But this is not the case with those of the interventricular or interauricular partition, of the fleshy columns and of their tendons; but the present state of science does not enable us to form an accurate conclusion as to the symptoms or results of the latter diseases. It is scarcely necessary to observe that there can be no *effectual treatment* for extensive ruptures of the heart, of its fleshy columns or tendons.

WOUNDS OF THE HEART.

Wounds of the heart may be penetrating or not penetrating. They may be complicated with the presence of the foreign substance, which inflicts them as a ball, or piece of cutting instrument. The best account of them is that of Ollivier. (Dict. de Medecine, T. viij, en 25 vols.) This author describes sixty-four cases, in twenty-nine of which the lesion was in the right ventricle, which forms the most uncovered part of the anterior surface of the heart; the left ventricle was injured in twelve cases; the two ventricles nine times; the right auricle three times; the left auricle once; the apex of the heart seven times; but in three cases the seat of the wound was not described. A fractured rib may also wound the heart.

Prognosis.—The majority of wounds of the heart are suddenly fatal, though in some cases death does not take place for a greater or less period of time. In extensive wounds of the heart, the patient dies as suddenly as if struck with lightning; quasi fulmine ictus concidit, says Diemerbrock, in describing the death of a duellist, who was stabbed with a sword through the left ventricle. But wounds of the left ventricle are not always suddenly mortal. Morgagni mentions the case of a man who received a stab of a knife through the anterior part of the left ventricle. There was but a very slight discharge of blood at the moment of the injury. After having walked about sixty steps, the wounded man sat down, and he died in about half an hour, while vomiting his dinner. A soldier fell on his bayonet, which penetrated between the sixth and seventh rib on the left side. He survived for forty-nine hours, and expired on the night-chair. A young man was stabbed with a knife under the left breast, and was seized with frequent fits of syncope. He did not expire until the tenth day after the wound was inflicted. There was a penetrating wound of the left ventricle.

According to M. Ollivier, wounds of the left ventricle are most suddenly fatal. He proves that wounds of the auricles are not so suddenly fatal as is generally supposed. On comparing the different cases of wounds of the heart, he states that wounds of the right ventricle are of the most common occurrence, but less frequently mortal.

The cause of sudden death in wounds of the heart is the compression of the organ by effused blood into the pericardium. (Morgagni, Ollivier.) This conclusion is doubted by Bouillaud. Bartholin was of opinion that the straightness and obliquity of the wound tended to retard death. M. Ollivier considers that the direction of the wound is the cause of prevention of sudden death; thus a wound of the left ventricle may only separate the superficial layers of the muscles, and transversely divide those of the deeper layer, and *vice versa*. A transverse wound in relation to those layers will suddenly give rise to a fatal hæmorrhage. Here we should consider the influence of the particular form of the cutting instrument, which traverses the thickness of the ventricular parietes. According to M. Samson the want of parallelism of the fleshy planes of the heart is the condition which most particularly favors the formation of a coagulum capable of stopping the wound.

These facts are not only deeply instructive in a pathological, but in a medico-legal point of view. A case is mentioned by Mr. Guthrie, in which a flap of the substance of the heart hung down from the organ, and death did not take place for some time afterwards.

Treatment.—Many cases prove that wounds of the heart are not necessarily fatal. The following plan of treatment is proposed by M. Ollivier. (d'Angers, op. cit.) The first indication to be fulfilled is to enfeeble the circulation by copious and repeated bleedings, and to moderate at the same time the movements of the heart by digitalis, &c. It

is also necessary, according to the advice of M. Samson, to keep the patient in an atmosphere as cold as possible, and to apply ice to the chest. The most perfect repose should be observed, the patient should be kept quiet in bed, and free from all mental emotions. The external wound should be closed in the usual manner, so as to favour the formation of a coagulum, which would stop up the wound. The most rigid antiphlogistic plan should be enforced. The lowest diet, with nauseating doses of tartarized antimony are likewise beneficial in such cases.

CONCRETIONS, OR POLYPI IN THE HEART.

Coagulation of the blood in the heart and in some of the large blood-vessels may occur during life, and give rise to concretions, which were formerly termed polypi. These are now generally divided into two classes, the recent or amorphous, and those of long duration, which are more or less organized. M. Bouillaud has detailed the histories of several cases, and he divides them into three species. 1. The recent or amorphous concretions, developed during the agony of death, or in a very short time after death.* 2. Concretions which have undergone the first degree of organization. 3. Those that are perfectly organized.

M. C. J. Legroux gives a very full account of concretions developed during life in a work expressly on the subject,† which I shall quote freely in this article.

RECENT, OR AMORPHOUS CONCRETIONS, WITHOUT ANY EVIDENT TRACE OF ORGANIZATION.

M. Bouillaud describes two remarkable cases of this disease, which were preceded by a sensation of sudden suffocation, and followed by sudden death. The first was that of a man aged 57 years, who laboured under disease of the heart with paroxysms of orthopneic respiration, and who expired suddenly. During the fits of extreme difficulty of respiration, the pulsations of the heart were strong, irregular, and dull, whilst in the moments of calm, they were very sonorous. Copious blood-letting afforded immediate relief. Death, however, finally took place during a paroxysm, and amidst the agonies of suffocation. The cavities of the heart contained enormous clots of black fibrinous blood, and the largest was in the right auricle.

The second case was that of a child treated for acute bronchitis, which became attended with orthopnœa, lividity of the lips and cheeks, jactitation, and inexpressible agony. The pulsations of the heart were precipitate, irregular, and slightly sonorous, and there was a dull shock behind the sternum with a feeble pulse. Death took place in a few hours. The left cavities of the heart contained clots of blood; the right cavities were filled with a fibrinous clot of a citrine colour, semi-transparent and interlaced with the fleshy colums of the heart, and valvular tendons, and which extended into the pulmonary artery, and into the superior and inferior cava.

SANGUINE CONCRETIONS WITH RUDIMENTS OF ORGANIZATION, WITH OR WITHOUT THE PRESENCE OF PUS.

These resemble pseudo-membraneous matter, the result of inflammation. M. Bouillaud relates eleven cases of this description, the results of which were the following: The first case was that of a man aged 67 years, affected with double pneumonia, with extreme orthopnœa. The concretions were similar to false fibrinous membranes, commencing organization on the fleshy columns and valvular tendons. The second case was that of a woman aged 86 years, whose right ventricle contained semi-fibrous concretions. Another patient laboured under acute pleuritis, one under acute rheumatism, one under disease of the heart with venereal disease, and others under cerebral disease, typhoid enteritis, and urinary abscess.

FIBRINOUS CONCRETIONS ENTIRELY ORGANIZED.

A girl aged 18 years, affected with a large tumour of the shoulder and in the axilla, was seized with hæmoptysis. The right auricle of the heart was filled to a great extent with a concretion, in the centre of which there were vesicles filled with a semi-concrete matter. This polypiform concretion was traversed by an infinity of vessels, injected with red and black blood. It extended into the superior vena cava, the right subclavian and jugular veins, with the parietes of which it was confounded as if by continuity of

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* These concretions do not differ from those formed after death, and which are met with in almost all dead bodies.

† Recherches sur les Concretions Sanguines, dites Polypiformes developpées pendant la Vie. Paris, 1827.

tissue. It was also prolonged into the right ventricle.

Another well marked case, was that of a man aged 36 years, who was supposed to labour under aneurism of the heart. The right cavities of the organ contained clots of blood, and a fibro-albuminous organized substance, adherent to the parietes of the cavity by filaments which required to be torn to separate them; and they were prolonged into the vena cava superior, and also into the pulmonory artery, whose orifice they almost completely obstructed.

GENERAL HISTORY OF SANGUINE CONCRETIONS OF THE HEART DEVELOPED DURING LIFE.

Situation and Anatomical Characters of Polypiform Concretions of the Heart.—Sanguine concretions are most frequently found in the right cavities of the heart, and in the auricles more than in the ventricles. The reason of this fact is, that the course of the blood is more easily arrested in the right than in the left cavities of the heart, and that phlebitis more frequently extends to the right than to the left side of the heart, and perhaps that there is a more marked disposition to coagulation in venous than in arterial blood.

The anatomical characters of concretions vary very much. Thus the recent ones do not differ from a clot of blood in a common vessel after venesection; and the quantity in the cavities of the heart has amounted to twelve ounces, (Bouillaud) but some of which clots were formed after death. The organized concretions present different characters according to the state of their evolution. Thus in the first stage of their evolution they are whitish, analagous to gluten or preprared fibrin, elastic, and slightly adherent to the parietes of the cavities of the heart, to the fleshy columns and valvular tendons round which they are entwined. At this period of rudimentary organization, they may be compared to the buffy coat on the blood drawn during acute inflammation, or to false membranes in the commencement of their organization on serous membranes. In fine, there are intermediate degrees from the gelatiniform to the fibrous state, which appears to be the last term of density of concretions. (Legroux.)

When the concretions are in a more advanced state of organization, they adhere by real cellular tissue to the parts on which they are formed (Bouillaud); and thus engrafted on living parts they penetrate the vessels, they become hardened, and they truly resemble certain fibrous polypi, fungous vegetations, and tumours. M. Legroux has found concretions so intimately connected with the valves, that it was difficult to determine whether they were formed by the blood in the cavities of the heart, or secreted by the inflamed tissue. In some cases there is a quantity of pus in the centre of the concretions, and these then resemble real unilocular or multilocular cysts. In other examples there are whitish, glutinous, membranous masses, which are the first lineaments of organization. Some ascribe the pus in concretions to inflammation of the concretions themselves;—(Legroux and others)—while Bouillaud is of opinion that it is secreted, and then surrounded by the clot; but this able author does not deny that sanguine concretions may inflame and suppurate. These concretions may undergo various transformations, and they diminish the cavities and orifices of the heart according to their size. It is important to recollect this fact, for it is to it that the principal symptoms of concretions in the heart are to be ascribed.

Causes and Different Modes of Formation of Polypiform Concretions in the Heart.—Sanguine concretions are developed in the heart, arteries, and veins, under the influence of purely physical and mechanical conditions, which oppose the circulation of the blood, and also by causes which act chemically on this fluid flesh. In the first case, concretions are formed by a mechanism similar to that of coagulation of the blood after it has escaped from the vessels; but this process is as yet unexplained. If we practice venesection at the approach of the agony of death, or in those diseases of the valves or orifices of the heart, which oppose a great obstacle to the circulation, the blood will be thick and semi-concrete on flowing from the vein. It is, therefore, to the concretion of the blood in the cavities of the heart, and to their formation, that many cases of sudden death is to be ascribed in certain diseases of this organ.

As to the chemical and vital causes of sanguine concretions, "a kind of crystallization of the blood," the principal are primitive or consecutive inflammation of the internal membrane of the heart (endocarditis), and the introduction of different foreign substances into the circu-

lation, as pus for example.* M. Bouillaud is disposed to believe that in febrile and inflammatory diseases in which there is a buffy coat on the blood, there is a strong predisposition to fibrinous concretions of the heart, which strongly resemble, in their incipient stage of development, the inflammatory coat of the blood; and he is convinced of this by the fact, that in almost all cases of concretions which he has met with, not caused by an obstruction to the course of the blood through the heart, they occurred with an idiopathic inflammation of the heart, or with an inflammation of some other organ, which powerfully reacted on the heart, or on the whole of the circulatory system.

Symptoms of Concretions of the Heart.—The signs of polypiform concretions of the heart, will be modified according to the situation of these substances. They will necessarily produce more or less impediment to the circulation of the blood through the heart, difficulty of breathing, headache, symptoms of apoplexy, &c. When they occupy the right cavities of the heart, which is the most common occurrence, the blood does penetrate into the lungs, but in small quantity, it reflows into the vessels situated behind the obstacle, it engorges all parts, but especially those that are most vascular, as the brain, the liver, &c., hence apoplectiform congestions, serous collections, or dropsies in the head, abdomen, and chest. But when the different parts of the body do not receive only a small quantity of blood which has been submitted to the air in the lungs, we observe, to a certain extent, the phenomena of asphyxia. These I have fully described in another work.†

The disorders are almost similar, when concretions obstruct the passage of the blood through the left cavities of the heart. But in this case there will be congestion of the pulmonary veins, which cannot disgorge themselves freely into the left auricle, and hence will arise a degree of dyspnœa, which does not happen in concretions of the right cavities.

Concretions in different parts of the cavities of the heart will impede the circulation of the blood in different degrees, and those connected with the valves will most obstruct it.

The symptoms of concretions are tumultuous beatings of the heart, with obscurity of the bruits which accompany them, a simple or sibilant bruit de soufflet, and sense of suffocation, orthopnœa, anxiety, followed by venous congestions, and, in some cases, coma, stertorous breathing, with or without convulsions, smallness of the pulse, coldness of the extremities. When these symptoms supervene during acute pericarditis, endocarditis, or carditis, it is extremely probable that concretions are being formed in the cavities of the heart.

In chronic diseases of the heart, with habitual dyspnœa or shortness of breath, there are violent fits of orthopnœa, threatening suffocation or instant death, it is almost certain that concretions are forming in the heart.

Prognosis—The prognosis of sanguine concretions of the heart, when these are large and considerably obstruct the course of the blood, is most unfavourable, for they sooner or later prove fatal.

Treatment.—Copious depletion and other antiphlogistic measures, as in pericarditis, the free use of tartarized antimony, and of the neutral salts of soda and potass, which are supposed by some to possess a solvent power on the blood. (Legroux, Stevens, Cameron, &c.) Bouillaud entertains the opinion that recent concretions may be dissolved and carried into the blood vessels; but that when they are organized, that they are incurable. But it remains to be determined whether the use of the hydriodate of potass might not cause their absorption, as it does of other adventitious growths.

DISPLACEMENTS OF THE HEART.

The heart may be displaced in different directions by the pressure of different tumours, by large aneurisms or effusions into the left side of the chest, or by enlargement of the spleen, morbid tumours near the diaphragm, or by abdominal effusions. The passage of the stomach or intestines into one side of the chest may also displace the heart. It has been found in contact with the diaphragm, with the spine, in different parts of the left cavity of the chest, and also in the

* It is ascertained that acids injected into the vascular system of animals coagulate the blood, as they do when it is removed from the body. There are also in the blood the elements of coagulation, when heat or electricity is applied. But what the relation is between artificial coagulation and that which happens under the influence of certain pathological states, is not as yet determined.

† Manual of Medical Jurisprudence, &c. Second Edition. 1836.

right cavity of the thorax. The diagnosis is simple in such cases, and is readily determined by auscultation, percussion, and inspection.

HERNIA OF THE HEART.

This disease has been observed by different pathologists. Vaubonais describes a case of a fœtus at the eighth month of pregnancy, in which the heart had escaped through an opening in the superior part of the chest, and it hung externally like a medal. Martenez, Besançon, Chaussier, and Breschet, have described cases of hernia of the heart, the accounts of which will be found in the excellent treatise of M. Bouillaud, which I have so freely quoted. M. Breschet has termed the disease *ectopia*, and divides it into three species: 1. Thoracic ectopia of the heart. 2. Abdominal ectopia. And 3. Cephalic ectopia.

PRIMORDIAL VICES OF SITUATION AND CONFORMATION OF THE HEART.

This class of anormal states are most frequently observed in the fœtus during intra uterine life, and are rarely met with at the adult age. I have fully described them under the head of embryonosology, in my lectures on the *Physical Education and Diseases of Infants*,* and they do not properly belong to the department of practical medicine, or to a manual of this kind. I shall now but briefly observe, that there may be acardia or absence of the heart, absence of one half of the heart, augmentation of the organ termed bicardia and tricardia; congenital transposition of the heart to the right side or dexiocardia; communications between the right and left cavities of the heart, either in consequence of non-obliteration of the foramen ovale, or of anormal perforations between the interauricular and interventricular partitions. It is to be lamented that all these diseases are incurable.

In the preceding history of diseases of the heart, I have given a much fuller account than can be found in any of our national works on the subject, and I have selected the most valuable information from the latest authors to the period at which I write, May, 1837. I deemed this indispensably necessary, because diseases of the heart are as common as any other in the body, and are generally mistaken for diseases of the lungs, as asthma, chronic bronchitis, phthisis, &c., and because they are not as yet fully described in any of our works on practice of medicine, or even in our best monographic treatises on cardiac diseases. Thus the works of Dr. Hope, and Dr. Elliotson, which are exclusively devoted to the consideration of this class of complaints, do not comprise the whole of them, and omit many which are now placed before the reader. Influenced by these convictions, I offer a more comprehensive, though more concise account of the nature and treatment of diseases of the heart, than any in our language, with which I am acquainted. I have divided diseases of the heart into structural or organic, and functional, in the same manner as I have those of the brain, spinal marrow, lungs and respiratory organs, the digestive and secretory organs, as the stomach, intestinal canal, liver, kidney, skin, genito-urinary system, &c. The adoption of this arrangement has enabled me to place a most important class of diseases, hitherto neglected, in as clear a manner as those of any other organ in the body. These I might have illustrated by numerous cases from the works of Bouillaud and others, as well as those which have fallen under my own care, both in hospital and private practice, had not the limits by which I am circumscribed, compelled me to be as concise as possible, and to avoid details of cases which might be considered digressions in an elementary work of this discription, which is chiefly intended for medical students and junior practitioners.

M. R.

* See London Medical and Surgical Journal. 1835. Vol i. p. 617, &c.

ON THE

ENDERMIC AND INNOCULATIVE METHOD,

OR TREATMENT OF DISAESES BY THE INTRODUCTION OF MEDICINE BY THE SKIN, DEPRIVED OF ITS EPIDERM.

Mascagni, in 1797, wrote thus to the illustrious Desgenettes, "The innumerable eminences on the surface of the human body are covered with the gaping mouths of the absorbent vessels, forming at first the tissues of the epiderm, then the net work, branches, and finally the trunks. The internal layers communicate with the external, and thus all parts correspond with the skin. The membranes of the absorbent vessels of the epiderm, and the hairs, are of a finer texture than that of the other parts; they

are therefore better calculated to absorb the substances reduced to a state of vapour. *When medicines are introduced through this channel into the circulation, they certainly produce good effects.* We may therefore now hope for the most satisfactory results, from the knowledge of the absorbent system, combined with the practice of medicine; whose progress should be the chief end of our labours, as well as the great object of our desire."

Without being acquainted with the anatomy of the absorbent vessels, guided by observation and experience, the ancients subjected medicaments to the absorbent powers of the skin. In the time of Hippocrates, the arteries were supposed to absorb atmospheric air. Thisfirst step naturally led to the employment of liquids, and solid agents reduced till they could be absorbed by the pores of the skin. *Hippocrates* frequently employed medicinal frictions in the treatment of the diseases of females. *Diocles* brought on vomiting by applying hellebore to the skin. *Theophrastus* observed that aromatic frictions on the integuments caused erucations, with an odour similar to the aromatic plant employed. *Celsus* recommended squills to be rubbed on the abdomen for dropsy. *Aretæus* prescribed aloes in friction. *Galen* made experiments with various decoctions and with cantharides. The Arabs thought the skin the best channel for the introduction of medicinal substances, and friction was common among the Greeks; but a therapeutical method founded on so imperfect a knowledge of the absorbent functions, and the uncertainty of their effects on account of the epiderm preventing the introduction of the medicaments, could only be had recourse to upon extraordinary occasions. This method fell into disuse for some time, till the erudite works of Cruikshank, Mascagni, Spallanzani, again brought it into notice. Attention was once more paid to the importance of cutaneous absorption, and the possibility of making it a substitute for the intestinal tube, which in a state of irritation would be unfit to receive medicinal agents. Previously to Alibert's experiments, Boyle had observed that aperient substances used as frictions produced the same effect as if taken internally.

Kennedy found that quinine rubbed on the skin proved anti-febrile. Chiarenti and Brera, in Italy, made numerous experiments with medicines employed as frictions. Alibert, Pinel, and Dumeril confirmed their efficacy. Christien, of Montpellier, extended the limits of this therapeutical method; its progress is due to him; he called it Iatraleptic, which refers to the manner of applying medicaments by friction.

Among all the diseases in which the iatraleptic method has proved beneficial, none have shown its efficacy so well as the syphilitic diseases treated by Cirillo's method of friction with mercury; or by Chrestien's friction with a preparation of gold. There are numberless scientific facts to warrant confidence in the employment of medicaments by friction. Fumigations in herpetic and syphilitic diseases, frictions, unctions, baths, lotions, poultices, are in common use; but not collectively united, so as to form a separate scientific therapeutical branch, under the name of external medication. The ancients were well aware of the aptitude the skin possessed for absorbing external substances, but what progress could be made while they were only acquainted with the two vascular systems, the one arterial, the other venous? and the existence of the lymphatic system was hardly suspected. Since Azelli, Mascagni, Lippi, and the researches of Chrestien, Pinel, Alibert, Dumeril, this branch of science has made some progress. It must however have been limited as long as the epiderm was a bar to the introduction of medicaments. Why not sooner have surmounted this slight obstacle?

It is extraordinary that the advantages to be expected from subcutaneous absorption have not been sooner understood; but the human mind ever proceeds by slow and almost imperceptible degrees. Who is not aware that syphilis and vaccine are inoculated when the slightest sore exists, or when there is only a trifling scratch? The effects of the sting of a serpent, of a wound with a dissecting scalpel, are universally known. Among the ancients how frequently death resulted from the wound of a poisoned arrow!

How is it that in England—the cradle of vaccination, the land famed for useful applications—this method, so rational, so certain, has not been employed more frequently? How is it that medical encyclopedists have not consecrated a few pages to call the attention of practitioners to a subject of such deep interest?

It is by the lymphatic and venous capillaries, profusely spread in the thickness of the skin, that absorption is effected. Covered with its epiderm, the

skin has no longer the same absorbing power; and this power is much less than that of the mucous membrane. The method of cutaneous absorption differs but little from that of the absorption of chyle on the intestinal surface, and is not merely an act of simple *imbibition* analogous to that found in inert bodies.

Once deprived of the protecting epiderm which covers the venous and lymphatic extremities of the periphery of the body, the skin becomes more absorbent; nearly all agents reduced to fine powder or liquid, or to a gaseous state, are immediately absorbed when the epidermic is off the skin; some substances which laid on the skin, when intact produce no effect, are, on the contrary, always absorbed when the epiderm is taken off. Such is the principle of the endermic or innoculative method.

All attempts to render the epiderm permeable by frictions or preparatory applications, are but of little consequence compared to the skin deprived of its epiderm. The important point is to open the venous and lymphatic vessels on the surface of the body, so that they may receive all the substances placed in contact with them.

In 1823, Messrs. Lembert and Lesieur conceived the idea of the endermic method. Before then, Murray had given out that aloes applied to the surface of a blister or seton, produced alvine evacuations. Bally observed narcotism in a child who had moxas applied, composed of salve washed in distilled laurel water. Professor Dumeril innoculated the small pox by applying to the surface of a blister, a thread covered with variolic virus. The same practitioner cured a paralysis of the eyelid by introducing into an incision, extract of nux vomica; but all these facts appertaining to science remained sterile, till Lembert and Lesieur thought of deducing from them a new therapeutical method.

These advantages were fully appreciated at a period when it was supposed that active medicines always produced intestinal irritation; and although there is at present less dread of irritation, there are a great number of circumstances to recommend the endermic method. Are there not morbid states which sometimes prevent the injection of medicaments? May not the intestinal mucous membrane be irritated or inflamed? At other times are we not obliged to seek new channels for the introduction of medicine when the stomach and intestines, accustomed to the stimulus cease to feel its effect? What is to be done in chronic gastralgia, and scirrhus and cancer of the stomach?

The introduction of active medicaments by the rectum, will be considered as supplimentary means in the cases here named; but how many chances against this method; for it is not the rectum sometimes in a state of irritation similar to that of the stomach and intestines, or it is not habitually filled with fæces, and consequently unfit to receive or retain the medicaments there conveyed?

When the possibility of conveying medicines to the internal plumonary surface by inhalation, was given out, the most happy results were anticipated. Was it possible to convey to the lungs, air impregnated with medicinal principles, without destroying its purity? and good air is as necessary as good food. Chloride, aromatic substances, and the vapour of tar have not realized the expectations formed.

How many well founded motives exist for endeavouring to find a new channel for the introduction of medicine; how many good reasons for appreciating the method presented by Lembert, and for confiding to the subcutaneous absorbents, medicines that could not be introduced by ordinary means. When once the epiderm is destroyed, the venous and lymphatic absorbents receive the substances applied, and convey them unaltered, and almost without mixture through the whole extent of the circulatory system. This method is perhaps more simple than any other: if any positive result may be expected from a medicine, it is when the substance shall have been applied on absorbent vessels, and that the digestive powers have no action on it. The greater the progress of chemical knowledge, the greater will be the advantages of the endermic method; as the active part of medicines, freed from the useless mass which surrounds them, may act with greater safety on the tissues.

Why have medicines always something uncertain in their action? It is because they reach a surface ever varying in its condition, or the intestinal mucous membrane is irritated or covered with mucosities, or the stomach and bowels are full. In subcutaneous absorption, the absorbent vessels are always in a free state when recently deprived of their epiderm.

Previously to employing the endermic method, it is necessary to be acquainted with the action of the different agents on the tissues: the caustic agents are not absorbed, because they destroy both the

tissues and the absorbent vessels they touch: then again, absorption cannot take place, even after raising the epiderm, if time be left for the establishment of the pseudo membrane, which is secreted so speedily after the epiderm is taken off.

Before we lay down rules for the endermic method, let us judge of its application in the hands of men whose very name is an authority, after which we shall draw consequences, and establish rules to guide the practitioner.—*Continental and British Medical Review.*

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THE CERTIFICATE SYSTEM.

The system of granting certificates to students by the various lecturers of the metropolitan schools—a system which has been so long tolerated, notwithstanding its enormities and fraudulent tendency, is at this season in its full and vigorous operation. It is impossible to conceive anything more nefarious than teachers granting certificates of punctual and diligent attendance on their lectures, to those who have scarcely ever been within their theatres. To obviate this manifest evil, and in order to prevent false certificates being granted to inattentive pupils, the Royal College of Surgeons of Edinburgh enacted some time ago, the following regulations:—

"I. That every private lecturer at this school of medicine, whose lectures are recognized by the College, shall ascertain, at least 20 times in a 6 months' course, and 10 times in a 3 months' course, the actual attendance given by his pupils.

"II. That he shall do this by calling the name of each pupil at least once a-week, causing him *to stand up when answering to his name,* and entering in a regular roll-book the presence or absence of each individual,—the students, of course, being kept in ignorance of the particular day on which this is to be done.

"III. That the said roll-book shall be kept according to a form prescribed by the College, and be at all times accessible to the President and Treasurer of the College, who shall examine it at least once during every session.

"IV. That, at the end of every session, each private lecturer at this school of medicine shall transmit to the President of this College a list of the pupils who, during that session, have attended his lectures, and specify the number of times each has been present when the roll was called.

"V. That, in granting certificates of attendance, the private lecturers shall use the annexed form, filling up the blanks with words at length, and on no account employing figures: [The form certifies the attendance of the pupil, that the roll was called so many times, and that the pupil was present on so many of those occasions.]

"VI. That, when a student's certificate of attendance bears that he has been more than four times absent when the roll was called, the president shall intimate this at the foot of that student's letter to the examinators, specifying the branch, or branches, on which the defective attendance has been given, in order that he may be particularly examined upon them. But if a student's certificate bears that he has been absent more than eight times when the roll was called, he shall not be admitted to examination at all, until he has attended another course of lectures on every such department of study. These numbers refer to six months' courses, and one half

of the same numbers to regulate the procedure as to three months' courses.

"VII. That when a student's absence has been occasioned *by sickness*, or any other unavoidable cause, such cause shall be stated in the certificate, by the lecturer; and also in the periodical return to the president, in order that the council may decide whether the student shall, or not, be required to attend *another course* of such lectures before examination."

In framing these regulations, the Royal College of Surgeons of Edinburgh have only done so in imitation of a renowned professor in Gower Street, who, after the experience of several seasons, found that his prosy eloquence in place of having a positive electro-attractive effect, had a negative repulsive tendency, which prompted the learned professor to institute a *roll-call* every morning, which had certainly the effect of collecting all the names, but not the attendance of the body corporate, for one student being authorized, by his comrades during their absence, to answer for them; and, if report can be relied on, friendship went so far, that one student was wont to answer for not less than thirteen of his bed-ridden companions. The only parallel case which has come within our knowledge, and which is so often told for Sir James M'Gregor, is of an officer whose whole supply of linen consisted of three shirts, one of which was marked No. 23, the other No. 33, and the last No. 43.

Certificates, however, continued to be given without the slightest hesitation, although the operation of the roll-call system must have been well understood. A similar attempt was made to elude the vigilance and eagle-eye of James Macartney; but the student on this memorable occasion, who had been in the habit of sending his surtout to occupy his seat in the theatre, on applying for his certificate to the celebrated professor, received a document to the following effect:—

"I hereby certify, that Mr. Terence O'Brien, M'Fuddle's SURTOUT, has *punctually* and *soberly* attended my lectures on anatomy and physiology.

(Signed) JAMES MACARTNEY.
Trinity College, Dublin."

THE QUEEN'S HEALTH.

Though the symptoms of her Majesty's disorder have been somewhat abated, no alteration has taken place in the general character of her condition.

There is an absurd report in circulation amongst a certain circle, that her internal ailments have been caused by the imprudent measures which were adopted to suppress an eruptive disease. We do not know what truth there may be in the report of a change of her Majesty's Medical Staff; and it is by no means unlikely that her advisers will have the good sense and discrimination to recommend the most justly celebrated Court Physician, who has so long graced and adorned the halls of the College.

THE ANATOMIST.

LOWER EXTREMITY.

The bones proper to the lower extremity are the femur, the tibia, the fibula, the patella, seven tarsal bones, five metatarsal bones, and fourteen phalanges.

THE FEMUR.

Head, forms nearly two-thirds of a sphere, and is received into the acetabulum, being directed forwards, upwards, and inwards; below its centre is a rough pit for the ligamentum teres, and its junction with the neck is marked by a rough line. With the exception of these parts it is covered by cartilage in the recent state.

Neck, extends obliquely downwards

and outwards from the head to the shaft, which it joins at an obtuse angle; it is flattened anteriorly and posteriorly, and its lower edge is much longer than its upper.

Great trochanter, is continued upwards from the shaft, but does not extend as high as the head, is situated externally, and gives attachment to the glutæus medius, glutæus minimus, and quadratus femoris muscles.

Digital fossa, is situated at the root of the great trochanter, and affords insertion to the external rotator muscles.

Lesser trochanter, is situated posterior and internal to the shaft, and has inserted into it the psoas and iliac muscles.

Intertrochanteric lines, are two in number, one anterior, the other posterior; as their name implies, they pass (obliquely) from one trochanter to the other.

Shaft, is broad at either extremity, particularly towards the knee, and is narrow and triangular in the centre; it is arched and smooth anteriorly; at its posterior part it is concave, and presents a rough line called linea aspera, about the centre of which, and directed downwards, is the foramen for the nutritious vessels.

Linea aspera, is best marked for the central third of the shaft; towards the upper third it bifurcates, one ridge running to each trochanter; inferiorly it also divides into two ridges, which pass to either condyle, the inner one being interrupted where the popliteal vessels pass over it. By these inferior ridges a flat triangular surface of the femur is bounded laterally, which receives the name of popliteal surface.

External condyle, is larger and projects more upon the anterior surface of the femur than the internal, it is also broader and ascends higher upon the shaft.

Internal condyle, narrower than the external; it also descends lower, in order that both condyles should rest upon the tibia in the natural oblique direction of the femur.

External tuberosity, above the external condyle for the attachment of the external lateral ligament of the knee-joint.

Internal tuberosity, above the internal condyle, and more prominent than the external, for the internal lateral ligament and the insertion of the great adductor tendon.

Popliteal groove, between the external tuberosity, and the external condyle; it lodges the popliteal tendon in the flexed position of the joint.

Trochlæa, between the condyles on their anterior aspect, supports the patella when the leg is extended.

Intercondyloid fossa, is situated posteriorly between the condyles.

PATELLA.

Shape, triangular, the base superiorly having the extensor muscles inserted into it, the apex below to which is attached the ligamentum patellæ.

External surface, presents a fibrous appearance, and is convex.

Internal surface, presents two articular surfaces, divided by a prominent edge; the internal surface is the deepest whilst the external is broad and shallow.

TIBIA.

Shaft, is triangular, presenting three surfaces, separated by corresponding edges. The inner surface is subcutaneous, except at its upper part, where the tendons of the sartorius, gracilis and semitendinosus muscles pass over it, it terminates in the inner malleolus; the external surface is covered by the belly of the tibialis anticus muscle for its upper extent, and is here concave; inferiorly it is convex, and anterior to support the tendons of the extensor muscles of the toes; the posterior surface presents an oblique line directed upwards and outwards for the attachment of the solæus, poplitæus, and deep flexor muscles, the nutritious foramen, which is the largest in the body, is a little below this line, and directed upwards. Of the edges, the anterior is most prominent and subcutaneous; the inner is less defined, and the outer is well marked, affording attachment to the interosseous ligament.

Upper or femoral extremity, expanded to articulate with the femur, is convex upon its sides and anterior aspect, being grooved posteriorly.

Tuberosities, are three in number, two laterally, and one anteriorly; the anterior is most prominent for the insertion of the ligament of the patella; the inner is less so, and affords attachment to the internal lateral ligament of the knee-joint, and the semimembranosus muscle, and the outer is the least developed.

Superior articular surfaces, are three in number, two for the femur, and one for the head of the fibula; those for the femur are separated by the spine, the internal being oval and deep; the external, circular, shallow, and directed down-

wards and outwards; that for the fibula is behind the external tuberosity, and looks downwards.

Spine, placed between the articular surfaces for the femur, projects upwards, and is bifid at its apex.

Lower or tarsal extremity, is much smaller than the upper and quadrilateral, the anterior edge being convex for the passage of the extensor tendons; the posterior, marked by a groove, for the passage of the tendon of the flexor pollicis proprius muscle; the external presenting a rough triangular surface for the fibula, and the internal terminating in the internal malleolus.

Internal malleolus, is convex and subcutaneously internally, its external or articular aspect being smooth, to articulate with the astragalus, besides giving attachment to the internal lateral ligament of the ankle-joint, by its inferior edge it affords a groove posteriorly for the tendons of the flexor communis and tibialis posticus muscles.

Inferior articular surface, rests upon the crown of the astragalus, it is quadrilateral and concave from before backwards, and joins the small articular surface of the internal malleolus at a right angle.

FIBULA.

Situation, on the outer side of the femur.

Shaft, triangular and twisted, gives attachment to the peronæi muscles by its external surface, to the solæus and flexor pollicis muscles by its posterior surface, and to the extensor muscles by its anterior surface. Its inner edge is well developed to afford attachment to the interrosseous ligament, and the nutritious faramen, directed upwards, is placed upon the posterior aspect of the bone.

Head, articulates with the femur by a small circular surface directed upwards and inwards, and affords attachment to the external lateral ligament of the knee-joint, and the biceps flexor muscle by a rough projection situated posteriorly.

Neck, is the small constricted part by which the head is united to the shaft.

Tarsal extremity, presents a large oval process called the external malleolus, about two inches and a half above which the shaft is constricted.

External malleolus, is larger than the internal on a line posterior to which it is situated; by its edge it affords attachments to the external lateral ligaments of the angle-joint. Its outer surface is convex and subcutaneous, the inner or articular being smooth to articulate with the outer side of the astragalus; above this surface is a triangular rough aspect for the inferior connection of the bone with the femur.

TARSUS.

Forms the posterior part of the foot, the bones which compose it are seven in number, which articulate with each other. It is connected above to the tibia and fibula, below it is hollow, and anteriorly it unites by articular surfaces with the five metatarsal bones. The seven tarsal bones are the calcaneum, astragalus, navicular, cuboid, and three cuneiform.

CALCANEUM, OR OS CALCIS.

Situation at the posterior and under part of the tarsus.

Posterior aspect, elongated to form the heel, presents a smoothness above for a bursa mucosa, and a rough surface below for the insertion of the tendo achillis.

Anterior aspect articulates by a smooth surface with the cuboid bone.

Superior aspect presents two articular surfaces, which support the astragalus; these are separated by a groove, into which ligaments are inserted.

Inferior aspect is irregular, presenting two small tubercles, and two lines for the attachment of muscles and ligaments.

External aspect presents a small tubercle for the insertion of the middle external lateral ligament of the ankle joint it is also slightly grooved for the passage of the peronæi tendons.

Internal aspect presents a narrow edge for the attachment of the internal lateral ligament.

ASTRAGALUS.

Situation, at the upper and middle part of the tarsus, between the malleoli at either side: the tibia above, and the calcaneum below.

Crown, broader anteriorly than posteriorly; presents three articular surfaces; one large, superiorly to articulate with the tibia; the others, one on either side, to articulate with the malleoli.

Head, convex and smooth, is directed forwards and inwards, and is larger than the concavity of the navicular bone with which it articulates.

Neck, the contracted portion between the crown and the head is rough, for the attachment of ligaments.

Inferior aspect presents two articular surfaces for connexion with the calcaneum;

these are also separated by a groove, from which ligaments pass to the groove in the calcaneum.

Posterior aspect is narrow, and presents a groove for the tendon of the flexor pollicis longus muscle, and a pointed eminence for the posterior external lateral ligament of the ankle.

NAVICULARE.

Situation, middle of the tarsus.

Posterior aspect is smooth and concave, to articulate with the head of the astragalus.

Anterior aspect presents two vertical lines, which divides it into three smooth surfaces for articulation with the three cuneiform bones, and, in general, a small articular surface, where it touches the cuboid bone.

Tubercle, situated inferiorly for the insertion of the tendon of the tibialis posticus muscle.

CUBOIDES.

Situation, outer and anterior part of the tarsus.

Upper surface, flat and rough for ligaments.

Lower surface, tubercular behind, for the calcaneo-cuboid ligament, and presenting a groove anteriorly for the tendon of the peronæus longus muscle.

Posterior surface, smooth and concave transversely, to articulate with the os calcis.

Anterior surface presents two articular surfaces; the external triangular to articulate with the metatarsal bone of the little toe, the inner square for the fourth metatarsal bone.

External surface narrow and free.

Internal surface presents a posteriorly small articular surface for the naviculare, and anteriorly a second, which is larger, to articulate with the outer side of the external cuneiform bone.

INTERNAL CUNEIFORM BONE.

The largest of the three articulates behind with the scaphoid; before, with the first metatarsal bone; externally, with the middle cuneiform and side of the second metatarsal bone.

Tubercle is situated inferiorly for the insertion of the tendon of the tibialis anticus muscle, and part of the tendon of the tibialis posticus.

MIDDLE CUNEIFORM BONE.

The smallest articulates behind with the scaphoid bone; before, with the second metatarsal bone; externally, with the external cuneiform; and internally, with the internal cuneiform.

EXTERNAL CUNEIFORM BONE.

Articulates behind with the scaphoid bone; before, with the third metatarsal bone; internally, with the middle cuneiform and side of the second metatarsal bone; and externally, with the cuboid and fourth metatarsal bone.

METATARSUS

is the middle part of the foot, and is composed of five long bones placed between the tarsus and the toes.

FIRST METATARSAL BONE,

the shortest and thickest, is convex above and concave below.

Posterior extremity is smooth and oval, to articulate with the internal cuneiform bone.

Anterior extremity, round, to articulate with the great toe. The under surface of this extremity articulates with two sesamoid bones, and receives the insertion of the tendon of the peronæus longus.

SECOND METATARSAL BONE,

the longest.

Posterior extremity articulates with the three cuneiform bones, and also with the third metatarsal bone.

Anterior exiremity presents a round head, for articulation with the second toe, which is separated from the shaft of the bone by a groove.

THIRD METATARSAL BONE.

Posterior extremity articulates with the third cuneiform bone.

Anterior extremity resembles the second, and articulates with the third toe.

FOURTH METATARSAL BONE.

Posterior extremity articulates with the cuboid bone, and by its inner side with the third cuneiform.

Anterior extremity resembles the second, and articulates with the fourth toe.

FIFTH METATARSAL BONE.

Posterior extremity articulates with the cuboid bone by a surface directed obliquely upwards and outwards.

Anterior extremity resembles the second, and articulates with the fifth toe.

PHALANGES, OR TOES,

are composed of fourteen bones, three to each toe, except the first, which has only two.

FIRST PHALANGES.

Shape, convex above, concave below, and the longest.

Anterior extremities, convex from above downwards, and concave laterally; form ginglymoid articulations with the second phalanges.

Posterior extremities are large, and present rounded concavities for the heads of the metatarsal bones.

SECOND PHALANGES.

Anterior extremities resemble those of the first phalanges.

Posterior extremities, concave from above downwards, and convex transversely; articulate with the first phalanges.

THIRD PHALANGES.

Anterior extremities, pyramidal in form, support the nails on their upper surface, and are tubercular and porous on their under surface.

Posterior extremities resemble the posterior extremities of the middle phalanges.

SESAMOID BONES

are uncertain in developement; two are generally found at the base of the first phalanx of the great toe, and one at that of the fifth toe. They are also frequently developed in the tendons which cross the sole of the foot in those situations where they are subjected to much pressure.

ANIMAL MAGNETISM.

(Concluded from page 37.)

Experiments of the French Commissioners—Failure of Animal Magnetism—Children not affected—M. Jumelin's Magnetic Theory — Effects of his Treatment of Patients — Want of Effect from Magnetism — Great Effect without Magnetism—Distinction of Magnetic Poles unfounded—Experiments with blindfolded Patients—Influence of a more or less excitable Imagination — Magnetized Trees—Experiments at Passy—Unfavourable Results—Magnetized Cups—A Lady struck Dumb by Magnetism—Haunted Eye—Magnetism through a Screen—Removal of a Crises by Magnetism—Circumstances which favoured the Production of Crises in Public—Effects of Pressure on Different Parts of the Body—Influence of the Uterine System—Effects of Imitation—Les Trembleurs des Cevennes — Women possessed by the Devil—Narrative by the Marshal to Villares—Anecdote of the Mayor of Alais — The Unknown Tongue in France—Magnetic Sympathy—Patients Magnetizing Each Other—The Gift of Tongues conferred by Magnetism—Anecdotes—Instances of Seeing without Eyes—General Summary—Pretensions of Animal Magnetism—What it does, and what it does not do—Magnetic Elixir of Immortality—Conclusion.

[We shall now conclude our notice of the researches of the Commissioners appointed by the Faculty of Medicine at Paris.]

One of the commissioners had a nervous attack, characterised in particular by excessive coldness of the feet. M. Deslon magnetized him, and put his own foot near one of the commissioner's, but without raising the temperature of the latter. The patient was then placed near the fire, and quickly recovered; but did not experience any effect of the magnetism.

Another of the commissioners, M. Franklin, being prevented from attending with the rest, was magnetized by M. Deslon at his own house, in the presence of a numerous company. Several patients who accompanied M. Deslon, were affected in the same manner in which they had been usually acted on when magnetized on former occasions; but neither M. Franklin himself, his father and mother, his secretary, an American officer, and a lady, who were present, experienced any effects from being magnetized. Children, who were not sensible of what was going on, were not found to be affected.

The commissioners were directed to another magnetizer, M. Jumelin, who differed in his views from Messrs. Deslon and Mesmer, and regarded the magnetic fluid as identical with calvric. He performed experiments in their presence on eleven patients. Of these, "eight men and two women felt nothing. One only, a female, on being magnetized at a little distance, without being touched, declared she felt a sensation of warmth. When M. Jumelin moved his hand before her face, presenting the extremities of his fingers toward her, she felt as if a

flame passed over her. Magnetized in the regions of the stomach and the back, she felt the same heat in those situations. At last, she declared that she felt a general warmth over the body, and a pain in the head. The commissioners suspecting that these effects were due to imagination, blindfolded her, and then magnetized her; in which circumstances the phenomena no longer corresponded to the parts to which the magnetic applications were directed. Magnetized over the stomach and the back, the patient felt heat in the head, and pain in the right eye and the left ear. The bandage was then removed from her eyes, and M. Jumelin applied his hands to the hypochondria, upon which she said she felt heat there, and, in a few minutes time, that she was going to be ill, and ill she was accordingly. When she had completely recovered, her eyes were again blindfolded. M. Jumelin was taken out of the room, and the woman was made to believe that she was being magnetized. The effects were the same as before; the same heat, the same pain in the eyes and ears, although no action whatever was exerted on her. She declared, in addition, that she felt heat in the back and loins. At the end of a quarter of an hour, M. Jumelin magnetized her over the stomach, but she felt nothing, and then over the back, with the same result. Her sensations diminished instead of increasing; for although the pains in the head remained, the heat in the back and the loins ceased." M. Jumelin did not recognize any distinction of magnetic poles; and as he produced the same effects as those who did, it is quite evident the distinction is groundless.

"A servant of M. Jumelin had then his eyes bandaged, and they persuaded him he was being magnetized. Immediately he felt a general warmth, and movements in the abdomen. The head began to feel heavy, he gradually became very quiet, and seemed to be on the point of falling asleep. His eyes being then uncovered, and the iron rod pointed to his forehead, he said he felt a pricking sensation there. When his eyes were again covered, although the rod was still presented, he said he felt nothing. Finally, the rod was taken away altogether, and he was then asked if he felt any thing in his forehead. He replied that he felt as if something was going backwards and forwards over it.

"M. B., a gentleman well educated, particularly in medicine, on being blindfolded, presented the same results, experiencing effects when not acted upon, and often experiencing nothing when he was acted on. For ten minutes before he was magnetized at all, although he thought they were acting on him, he felt a heat in the loins, which he compared to that produced by a stove. His resorting to this comparison, proved that the sensation was a powerful one, and it is equally plain that it was indebted for its origin to imagination alone."

The commissioners instituted a great number of experiments, varied in every possible form; and the only difference observable was such as was due to a more or less excitable imagination. M. Sigault himself relates that on one occasion when it was determined to magnetize him, in order to overcome his incredulity, he felt at the moment they were going to touch him, a constriction of the chest, and palpitations of the heart; but having summoned his self-possession, they employed all the gestures and proceedings of magnetism, without producing any impression.

The magnetizers affirmed that when a tree was magnetized, all who approached it would feel the effects of the secret agent more or less severely; in some instances, even to the loss of consciousness, or to convulsions. M. Deslon informed the commissioners that the experiment would succeed, if performed with a person of a temperament liable to be affected by the magnetic fluid. They requested him, therefore, to choose a person whom he had previously known to be susceptible of magnetic impressions. He accordingly took down to Passy a boy about twelve years of age. They conducted M. Deslon to an apricot-tree, which stood in the garden by itself, in order that he might magnetize it; the boy being left in the house, in the care of a person who never quitted him. They wished that M. Deslon should not be present at the subsequent experiment; but he declared that it might fail if he did not look at the tree, and point his cane towards it, in order to increase its action. However, they kept him at as great a distance as they could, and placed themselves between him and the boy, to prevent signals passing between him and the operator. The boy was then brought out, with his eyes bandaged, and conducted successively to four trees which were not magnetized; each of which he was made to embrace for about two minutes. M. Deslon was directing his cane

all this while towards the tree which really was magnetized.

"At the first tree, which was twenty-seven feet distant from the magnetized one, the boy declared that he perspired profusely. He coughed, expectorated, and complained of a slight pain in his head. At the second tree, thirty-six feet from the magnetized one, he felt stupified, with the same pain in his head. This pain and stupefaction were much increased at the third tree; and he said he thought he was approaching the magnetized tree. He was, however, thirty-eight feet from it. Finally, at the fourth tree, which was eighty feet from the really magnetized one, the boy fell into a crises. He lost his senses, and his limbs became stiff. They laid him on the turf at a little distance, and M. Deslon brought him to.

"The result of this experiment was quite unfavourable to magnetism. M. Deslon endeavoured to explain it by saying that all the trees naturally possessed magnetic properties, which were besides strengthened by his presence. But if that were the case, a person susceptible of the magnetic influence could never walk in a garden without the risk of falling into convulsions; and if M. Deslon's presence were so powerful, it is a wonder that it had no effect on the boy while in the coach in which they went down to Passy together."

On another occasion, "a woman, with her eyes bandaged, was taken into a room by three commissioners, and was persuaded that M. Deslon was going to magnetize her. One of the commissioners then called on that gentleman to begin; although, of course, he was not present. In about three minutes time the patient had a nervous rigor, pain at the back of the head, and then in the arm, with a feeling of uneasiness in the hands. Her limbs became rigid, she struck with her hands, rose from her seat, and stamped with her feet. The crises, in short, was well marked. Two other commissioners were in a separate room with a young lady subject to nervous affections. Her eyes were left uncovered, but she was placed opposite to a closed door, on the other side of which they pretented M. Deslon was magnetizing her. A minute had scarcely elapsed before she had a rigor, followed by chattering of the teeth, and a sense of general heat. In three minutes the crisis was complete. The respiration was hurried. Her arms were stretched out behind, twisted strongly, and the body was bent forwards. She bit her hand with sufficient force to leave the marks of he teeth imprinted on it."

The first of these two women was made the subject of another experiment, with what is called the magnetised cup. "This is performed by magnetizing one among a number of cups, and presenting them all successively to a patient susceptible of magnetism. When he arrives at the particular cup, he ought to fall into a crisis, or at any rate to exhibit very marked effects. The woman was taken to the Arsenal, where M. Deslon was. She had got no further than the anti-chamber when she fell into a crisis, although she had not yet seen either the commissaries or M. Deslon, but she knew she was going to see him, and that was enough to excite her imagination. When the crisis was over, she was taken into another room, where several porcelain cups, which had not been magnetized, were presented to her. At the second cup she began to be affected, and at the fourth fell into another crisis. In a little while afterwards, having asked for drink, it was given her in the magnetized cup. She drank quietly, and said she felt much better. Magnetism and the cup, therefore, failed of effect, for the crisis was calmed instead of being exasperated."

The experiment was varied in another way. "While M. Majault was examining this woman's eyes (which were affected with cataract,) the magnetized cup was held behind her head for twelve minutes, without her being aware of it, or experiencing any effect from it. On the other hand, the commissioners having retired, and different persons, unacquainted with magnetism, coming about her, convulsions recommenced. She was told that no one was magnetizing her; but she replied, 'If you were not doing any thing, I should not be in the state in which I am.' She knew that she had come for the purpose of being submitted to experiments, and so excited was her imagination, that the approach of any person, or the slightest noise, attracted her attention, excited the idea of magnetism, and the convulsions were renewed.

"A young lady, twenty years of age, was deprived of the power of utterance by the magnetic process; so that for the space of a minute she could not articulate sounds, notwithstanding all her efforts." Sight was necessary in this instance, for they could not succeed when she was blindfolded; and its im-

portance, as an avenue through which the imagination is reached, was likewise seen in the following case: "A woman who had but recently come under M. Deslon's care, having, when recovering from a crisis, encountered the look of one of his pupils, was for a long time haunted by it. The eye appeared to be constantly before her, and looking at her, and for three days kept constant possession of her imagination, whether sleeping or awake."

Mademoiselle B., who has already been mentioned as having been magnetized at Passy, was again magnetized at Paris, by M. Deslon himself, through a paper-screen. The latter could present no obstacle; for the magnetic influence is said to pass through wooden doors, stone walls, &c. At Passy she fell into a crisis after three minutes; but in Paris she was magnetized for half an hour, without any crisis at all. The cause of this difference was that at Passy she knew she was being magnetized, while at Paris she knew nothing about it. The magnetizer then advanced from his concealment, and magnetized the young lady with direct, instead of opposite poles, which, according to the theory of magnetism, ought to have produced no effect. "Nevertheless, in about three minutes, she felt a general uneasiness, and a difficulty of breathing, followed by hiccough, chattering of the teeth, constriction of the throat, and severe pain in the head. She was restless on her chair, complained of pains in the loins, sometimes struck the floor quickly with her foot, and then stretched out her arm behind her back, twisting it forcibly; in a word, the crisis was complete, and perfectly characterized." All this occurred in about twelve minutes. Imagination not only put her into this crisis, but likewise took her out of it. "The magnetizer said it was time to finish, and presented to her his index fingers, in the form of a cross. There, be it observed, the poles were still direct. He had, therefore, made no change in the process, and therefore the same treatment should have produced the same results. On the contrary, however, the heat and pain of the head were removed; she became calm; all the symptoms disappeared one by one, and in three minutes Miss B. declared she was as well as ever.

Many causes contributed to augment the crises, in the public treatment of patients. Of these, very potent ones were touchings and pressure over various parts of the body,—the epigastrium, the hypochondria, the colon, the nervous centre of organic life, and, above all in females, over the regions of the uterus and ovaries. In a numerous assembly, the effect of imitation is very great, and impressions and motions are communicated from one to another with great rapidity. We have already seen one notable example of this, in the case of the young people at the church of St. Roch. Another remarkable instance was that of the "trembleurs des Cevennes." Marshal de Villars, who was personally acquainted with all the circumstances, writes as follows: "I have seen on this occasion what I could not have believed if it had not passed before my eyes, a whole town, in which all the women and girls, without exception, appeared to be possessed by the devil. They trembled, and prophesied publicly in the street. One had the boldness to do so before me for a whole hour. But of all these follies, the most surprising was that which was told me by the bishop of Alais, and which I communicated to M. de Chamillard in the following terms. M. de Mandagors, the mayor of Alais, has just done an extraordinary thing. He is sixty years of age, of sedate manners, and much talent, having written and published several works. A prophetess, about twenty-seven years of age, was arrested and brought before him. He questioned her before several ecclesiastics. She replied with a modest air, exhorting him no longer to torment the true children of God; after which she spoke to him for the space of an hour in a strange language, of which he did not understand one word. M. d'Alais had the prophetess put into confinement. After several months, as she appeared to be cured of her hallucination, by means of his care and advice, for he visited her occasionally, she was restored to liberty; and of this liberty, and of those which M. Mandagors took with her, the result was that she became pregnant. M. Mandagors affirms that it was at the command of God he was intimate with this prophetess, and the child which should be born would be the true Saviour of the world. The bishop wished me to have him arrested; but I think that in the midst of fools, all that relates to a fool of such consequence should be done with as little noise as possible; especially as, except on this particular subject, he is a very sensible man; just as Don Quixote was very reasonable, except when chi-

valry was in question. He was committed to the care of his children, in one of his houses, and the prophetess was again shut up."

Persons in a state of crisis, often seek each other by a kind of sympathy; mutually solacing each other by contact, and remaining together for a long time, in a state of calmness and quietude. The following is an instance of one patient magnetizing another. "A young man who was frequently in a state of crisis, was at those times dumb, quietly walking through the rooms, and frequently touching the patients. This sometimes produced a crisis, which he regularly conducted to its termination, without allowing any interference. When he recovered to his ordinary state, he talked, forgot all that had taken place, and no longer knew how to magnetize."

In general patients in a state of somnambulism, do not answer questions put in a strange language; but the following is an instance of the contrary: "A very talented and well educated physician, had a patient who, when in somnambulism, exhibited the most surprising phenomena. He understood him when he spoke in Latin, Greek, and English. One day he read to his patients some lines in English, 'What do you think I know of your gibberish?' replied he. 'Why,' said the magnetizer, 'I have frequently spoken to you in that language, and you have answered me.' 'If that was the case,' rejoined the patient, 'It was your *thoughts* I understood, and not your *language.*'"

Dr. Bertrand gives several remarkable instances of seeing without eyes. One of the most striking was that of "a patient in somnambulism who, though his eyes were evidently closed, did not indicate with less precision the place where a ring was concealed, which I had taken from his finger, and given to a lady who was present. What rendered this experiment more conclusive was, that the husband of this lady took the ring from her (unknown to me) and put it in his pocket. It was there that the patient declared he saw it, and persisted in the declaration, notwithstanding my assurances that it was not; for I thought the lady had it still." Petelin relates the case of a lady, who told the hour by a watch concealed in the hand of her husband; described an antique medal in closed hand of another person; and recognised a letter addressed to her which was shut up in a box. Another patient in somnambulism, is said to have described the study of one of the doctor's present, situate in a distant city, telling him the relative position of the books, and a skull which it contained.

Animal magnetism certainly did not do all that was claimed for it. It was put forth as a means of "universal cure and preservation;" which amounts to nothing less than a magnetic elixir of immortality. It becomes us, however, to interrogate nature for ourselves, and not to be misled by her interpreters. Tried by this test, animal magnetism did not prove a universal remedy; but it certainly produced some very curious effects. These effects have come before us in the course of these papers. Some of them are well established (convulsions, for instance); others are doubtful, particularly the curious state called somnambulism, of which several instances have come before us, in which patients have been said to see without eyes; to talk without consciousness; to describe accurately places they had never seen or heard of; and to foretel future events. Those who wish to prosecute the subject further, will find ample means of so doing in the work from which we have translated so largely, "Dr. Bertrand, on Animal Magnetism in France," in which the whole subject is investigated in all its branches and all its bearings.

CASE OF NÆVUS CURED BY PUNCTURE.

By Edward Doubleday, Esq.

The child of Mrs. ——, was brought to me at the beginning of November, 1834, with a diffuse swelling between the eyes, encroaching upon the left orbit, and of the size of a large nutmeg. On applying pressure, the tumour almost disappeared; but the moment the finger was removed, it returned to its former size. The mother stated, the first time she saw her child after it was born, she observed a *bruise* between its eyes. Five weeks after this, she noticed a small swelling, and at the expiration of three weeks more, making altogether two months from the birth of the child, it had acquired the size I have stated. The case presented a good example of an *increasing* nævus situated in the cellular substance. On the 5th of January, 1835, I introduced a couching needle into the centre of the nævus, and moved it from

side to side, so as thoroughly to break down the net-work of vessels. This operation was repeated on the 21st of February, 27th of March, 1st of June, 8th of August, and on the 1st of September, 1835. There was not any diminution of the tumour until after the third operation, after which it gradually decreased in size, although, I beg particularly to observe the nævus did not totally disappear until upwards of twelve months after the first puncture.

I have only further to observe, that I believe I performed the operation more *frequently* than was necessary. It is *length of time* that is required, and it will be important to observe the *dates* in this case.

I need hardly out point the advantages of this mode of removing nævus over excision and the ligature; it is only necessary to recal to mind the hæmorrhage induced by the first of these operations, the pain inflicted by the second, and the scar which results from both.—*Op. cit.*

REPORT ON THE ATMOSPHERE OF TUNNELS,

FOUNDED ON CHEMICAL ANALYSIS.

The Leeds and Selby Railway Tunnel, in which the experiment have been made, is 700 yards long, 17 feet high, and about 22 wide. It inclines 1 foot in 300, and is provided with three ventilating shafts, made originally in excavating the tunnel. They are respectively, 23, 22, and 19 yards deep, measuring from the top to the floor of the tunnel.

No fire or machinery is used to promote the ventilation of this tunnel. I have no hesitation, however, in expressing my conviction, that the air it contains is not injurious to the health of passengers, being renewed sufficiently often by the currents which always prevail in it, to preserve a wholesome atmosphere. The following are the reasons that have induced me to adopt this opinion:—

1. The examination of numerous specimens of air, procured from the tunnel under every variety of circumstances, by an assistant, who made observations there for a week according to the directions I had given him, has shown me that the amount of carbonic acid communicated to the air by the locomotive engine is considerably less than one per cent.,—an amount too trifling to be taken into consideration, as capable of affecting the health of passengers in the railway coaches during their progress through the tunnel.

2. If the average amount of coke consumed in each trip within the tunnel be calculated; and the volume of carbonic acid it produces be compared with the bulk of the air in the tunnel, we arrive at the same conclusion as by the experiments referred to.

3. But the carbonic acid must not be considered as equally diffused throughout the whole of the air in the tunnel. From the circumstances under which it is produced, it is necessarily at an elevated temperature and mixed with a large quantity of moisture; and though its temperature may instantly be reduced on coming in contact with the air, still the specific gravity of the great mass of the air in which it is enveloped is less than that of the rest of the air in the tunnel, and it floats principally above the roofs of the coaches till it escapes. The heat and moisture more than counterbalance any increased density from the carbonic acid, and numerous researches have shown that very heavy gases do not readily separate from air when they have been intimately mingled with it.

4. The temperature of the air in the tunnel, during the week that my assistant conducted his examination, &c., did not differ much from that of the external air; the greatest difference observed did not exceed six degrees. Its temperature is more uniform than that of the external air. On one occasion, the temperature of the air at the top of the deepest shaft rose, in a few seconds, from thirty-seven to forty degrees, as the engine passed and the vapour ascended from it, and fell as quickly again to thirty-seven degrees as the vapour escaped.

5. No impurity was detected in any of the specimens of air I received, except the carbonic acid, which, as already stated, bears a considerably smaller proportion than 1 to 100.

I may add, that I have been disposed to take a favourable view of the ventilation of tunnels generally, notwithstanding they should be longer than that under consideration; though local peculiarities may at times require special arrangements.

D. B. REID, M.D.
Lecturer on Chemistry.
Edinburgh, 13th March, 1837.

FAMILY CORRESPONDENCE.

Kilballymacologne, Blarney,
Nov. 1836.

My Dear Tom,—I can plainly perceive from your agreeable and sensible letter of the ———, that you have had a good deal to contend with in the selection of a school, and particularly of a good hospital. I hope you were not in a hurry, and that you made every enquiry about the men you had to deal with, before paying away your money; upon this head I am very serious, and I conceive it a most unfortunate thing that the honourable member for Finsbury was so much engaged as to afford you but one interview. I think you should have written to him, and asked his opinion about the Charing Cross hospital, as you could not see him: but "there is no help for spilt milk" now that they have the money in their clutches. The Howship you mention I never heard of, nor any of the gentlemen who were present at his lecture, except Mr. Van Butchell, who I hear is a black, and wears large mustachios. Enquire if the Doctor Goolding is the same Goolding who was an apothecary in St. Martin's Lane some years ago, when I was in London, and who delivered the women of either five or six children at one lying-in, and of whom it was said in Bell's Life, rather chimerically, that they were "all alive and kicking?" If so I know a relation of his a very decent person, though in humble life, who I am sure will give me an introduction for you to *Ben* as she calls him; but after all, the best introduction to all such people is the *pecunia*, or as old Monro the son used to call it the "baw-bees," and Sir Astley Paston Cooper, "the tin."

From what you say of Greville Street School, it sounds well, and is certainly cheap in comparison with the unreasonable and exorbitant charges of the others. I observe in the prospectus that one of the *professors* is a *Cantab*, and another an *Oxon*; is the school on this account in any way connected with Oxford or Cambridge? Make enquiry of the Dean of the Faculty, and let me know in you next.

The lectures on comparative anatomy being delivered gratis, must have been a great temptation to you to enter.

Although my dear Tom I have freely spoken my serious apprehensions to you about the course you have adopted in reference to the Charing Cross Hospital, yet don't let any thing I have said make you relax in your studies.

The introductory lectures are just what I would have anticipated, indeed, in my days few pupils attended the schools until all such trashy catch-pupil orations had terminated; and old nosey Carpue, as we then used to call him, as the first who made a nose after Taliacotius, never gave one, saying it was nothing but a "flash in the pan."

What you say of Doctor Charpie's accent you would have soon got over, I would advise you occasionally to hear him, as it is of importance your ear should be accustomed to the Scotch brogue; I am surprised that you say our countryman Quain has lost *his* brogue, for it is seldom we lose it so late in life, and when I saw his brother Jones last summer, he had a fair smattering of it, and was the same unaffected Patlander as ever. I am glad you had nothing to do with St. George's, for I heard from a private source that a great deal of low intrigue was daily carrying on by the medical men of that hospital, and whenever this is the case, a bad example to youth is not only set forth, but their professional education must also materially suffer.

The conduct of sir Everard Home who was their lord and master is quite enough to stamp its character as a place of education, and the gratis lectures I see advertised to be given there, must be a TRAP to snaffle the unwary. I wonder you did not enquire about the Middlesex Hospital! The name of Mayow is known to all Europe as a great physiologist, for his experiments on respiration; and Mr. Tuson who ground me up for the college of surgeons, and who must now be an experienced old practitioner, also enjoys a great celebrity for his contributions to medical science, particularly for his dissected plates which I was most fortunate enough to pick up a few days ago for one sixth of their first cost, and will send them to you by the first opportunity. Tell him who your father is, and he will soon remember me. Pat was out on the 20th and 21st and bagged seven brace and a half; Ponto was as steady as usual, and Fox has much promise. Aunt Sarah desires me to say the shopkeepers in London must be a very impudent set, she is quite in a fidget on account of the death of her black Tabby, which departed this world last night from sheer obesity. I have been dreadfully tormented by old Mrs. Shannahan, who has an unfortunate pain in the upper jaw, which she swears

is the "Tic" although as you are aware she has not a sound tooth in her head. She has taken up this idea in consequence of having read Sir Henry Halford's description of it in, as she calls them, his "*beautiful orations.*" I begged her to have one of her molars out, but she says I know nothing about it, and desires me to request you will consult Sir Henry. I suppose he is always to be found at Windsor attending the queen, and you must enquire what fee he expects; as his advice cannot be worth more than five guineas.

See about this my dear Tom as quickly as possible: let me hear from you soon. I approve highly of your joining the scotch student.

I remain your affectionate father,

Peter——

PROPOSED REDUCTION OF FEES AT THE MIDDLESEX HOSPITAL.

Sir—The interest which an old pupil takes in the fate of his school will I hope induce you, to insert this letter in your independent journal. *Independent* I venture to call it, because you have not *yet* like your contemporary come forward as the *hireling* of any particular school of medicine, nor do you countenance the frauds and hypocrisy of any parties of medical men. I could not help feeling vexed at the severe blow which the Middlesex Hospital got the last two sessions by the prodigious decrease of the number of pupils, in consequence of the North London Hospital admitting pupils at a *very reduced price.* This cannot be denied, for it would be absurd to suppose, that a few dramatic or rather tragic performances in an operating theatre, or an exhibition of unparelleled doses of kreosote or carbonate of iron by the pound, would induce a sober minded student to prefer the wards of that hospital to all the advantages of the Middlesex. I have therefore great pleasure in hearing, that the officers of the Middlesex contemplate to compete with the North London, and if they reduce the admission fee equally low as the Gower-street company, I hesitate not to assert that they will receive the same number of pupils as in former times—Indeed from the extravagant demand for hospital attendance in this metropolis, I am fully persuaded, that ere long, the fees of all of them must be greatly reduced—

CHIRURGUS.

Foley Place, May 1st. 1837.

P.S.—Since writing the above, Mr. H. has called, and informed me, that the wiseacre's of Westminster are seriously talking of lowering their price.

REVIEWS.

A Translation of the New Pharmacopœia of the Royal College of Physicians of London with Notes and Criticisms. By G. F. Collier, M. D., Member of the Royal College of Physicians of London, &c. Royal 8vo. pp. 272. Published by the translator, Spring Gardens.

A Translation of the Pharmacopœia of the Royal College of Physicians of London, with Notes and Illustrations. By Richard Phillips, F.R.S. L. & E. *By Permission.* 8vo. p. 392. London. 1837. S. Highley.

The translator of the first work is most favourably known for his great classical acquirements which are very apparent by his accurate edition of Celsus and other medical classics. He is therefore particularly well qualified for the task he has undertaken, and this he has not only executed with great fidelity, but enriched the original by numerous practical illustrations. These he has inserted in side notes, under the head of cautions. Thus after the translation of the formula for preparing the hydrochlorate of morphia are the following remarks.

"Incompatible with astringents containing tannin and gallic acid, which give precipitates with all the salts of morphia. —*Vide* Acetas Morphiæ.

This salt is uniform in its constitution, but the acetate of morphia varies. Besides, it has another advantage over the acetate, in not being deliquescent; whereas the neutral acetate is decomposed by water.

Formula for Syrup. ℞ Morphiæ Hydrochloratis, gr. ij. Syrupi, f℥iv. M.

The dose,—a tea-spoon full occasionally, when the cough is troublesome, or two tea-spoons full and upwards for an anodyne dose.

The sulphate of morphia was considered by the French physicians who used it as nearly equal in strength to that of the acetate, but the muriate is thought to be stronger.

N.B. Most of the patent preparations of opium are made with an excess of

acid; and therefore are less liable to decomposition than the neutral acetate. This observation does not apply to Battley's solution (containing very little spirit) which has no more acid in it than the laudanum itself, as far as the editor is able to judge from experiments frequently repeated; and he confidently adds, that if the dispenser be curious in selecting his opium, and giving it age before he use it, he will seldom want any chemical substitute for common preparations.—*Vide* Tinct. Opii.

Liquor Morphii Citratis (*Dr. Porter*). ℞ Opii crudi optimi, ℥iv. Acidi Citrici (crystal), ℥ij. These are bruised in a mortar, and a point of boiling distilled water being poured on, they are intimately mixed, and macerated for twenty four hours, after which the solution is strained.

Braithwaite's Black Drop, Take Opium, ℔ss. Verjuice, Oiij. Nutmegs, ℥iss. Saffron, ℥ss.

Boil to proper thickness; then add, sugar, ℥iv. and of yeast, two table-spoons full. Macerate near the fire for six weeks, then expose to the air until it becomes a syrup; lastly, decant, filter, and bottle it. About thrice as strong as laudanum."

Another specimen of Dr. Collier's will be sufficient to show the value of his notes and criticisms. After describing quina he thus proceeds:—

Quinæ Disulphas—Disulphate of Quina.—"These are the common crystals of commerce (formerly called sulphate of quina, and now called disulphate.) When this is triturated with diluted sulphuric acid, it forms a white magma, and, by the addition of more acid, it dissolves. On evaporating the solution, it yields crystals of the true neutral sulphate.

Incompatible with alkalies, alkaline carbonates, and with the usual precipitants of sulphuric acid, &c.

Crystals,—needle-like, pearly, flexible, silky, like asbestos, united in radiated flakes, and excessively bitter.

Be careful not to carry the desiccation too far, or the crystals will fall to powder."

Quina Draughts.—"℞ Quinæ Disulphat. gr. ss.

Acid. Sulph. dil ♏ ij.

Aquæ destillat. f℥vj.

Syrup. Aurantii, f℥j. M.

In dyspepsia as a stomachic."

Tonic Pills.—"℞ Quinæ Disulphatis, Zinci Sulphatis, āā gr. j.

Extract. Anthemidis, *q. s.* ft. pil.

Every two or three hours in the intervals of agues."

Dr. Sadillot's Febrifuge Pills.—"℞ Quinæ Disulphatis, gr. xij.

Opii Pulv., gr. iij.

Confect. Op., gr. x. vel *q. s.* for twelve pills: one every hour or two, in the intermission of ague.

Mr. Philip's translation contains a vast deal of chemical illustrations effected by diagrams which will be useful to all stu-d ents preparing for examination at Apothecaries Hall, as well as to practitioners who wish to prepare some of their own officinal medicines. But the work is much less diffuse than the former on the medical uses of the different preparations. Thus both works have their peculiar merits.

Dr. Collier's translation is ably executed and a most valuable book to the medical practitioner and student. Mr. Phillip's translation is executed with accuracy and is a most useful work to medical students, and practitioners, as well as to practical chemists.

A Practical Compendium on the Diseases of the Skin, including a particular consideration of the more frequent and intractable forms of these affections, with Cases. By Jonathan Green, M.D. Second edition, 8vo. pp, 371; two plates London 1837. Whittaker and Co.

We are happy to observe a second edition of this useful work in so short a period as a year, as it proves the estimation in which it is held by the profession. It is decidedly the most concise yet comprehensive and latest account of diseases of the skin in our language. Dr. Green has laid the best and latest foreign productions under contribution; and has introduced two coloured plates illustrative of the more common diseases of which he treats. Another and a strong recommendation in favour of this work is, that it is the cheapest on the subject. The author explains his additions to this edition in the following words:—

"The favourable way in which my practical compendium was received by the profession, and the sale of the first edition within a year from the time of its issuing from the press, induce me to give it a second time to the public, in a corrected and amended form. The chief addition made to this second impression consists of the back and front view of the figure, upon which, with the aid of a skilful draughtsman, I have endeavoured to exhibit some of the most characteristic appearances presented by a few of the more

frequent or remarkable diseases of the skin.

"For the term *Porrigo*, which embraces alike impetiginous and eczematous eruptions of the scalp, I have substituted that of *Favus*, in conformity with the latest and best authorities on the continent.

"The additional experience I have had in the treatment of the skin diseases since the first edition appeared, has only confirmed me in the general correctness of the pathological views and therapeutical principles I then advocated. My confidence in the vapour and fumigating baths, as ulterior agents in subduing these diseases, remains unshaken. When everything else has been tried and found unavailing, these baths, with due preparation and proper management, may still be held as specific in the immense majority of instances.

"I have been taken to task by some of my reviewers for not entering more into detail relative to these remedial means; suffice it to say, that in 1822, at the hospital of St. Louis alone, at Paris, 127,752 of these baths were administered. In 1833, the number had increased to upwards 150,000 in the year. In 1834, and 1835, upwards of 180,000 were administered each year. In November, 1836, I was informed the number would be about the same, as the baths were always full; and of sixty-two patients whom I saw present themselves to the Baron Alibert, one morning, for consultation, only seven were prescribed for, exclusive of one or other of these baths as part of the treatment.

"The numbers may surprise the reader, and the surprise will be ncreased when he considers that these baths are erected at the other hospitals, prisons, and poor-houses throughout Paris, where they are continually taken, not only as curative of disease, but as preservative of health.

"In this country, it is true, no such opinion of the worth of vapour and fumigating baths at present exists among the members of the medical profession; yet I should imagine that the time was not far distant when their utility will be generally acknowledged; and in confirmation of this idea, I may say that I have lately superintended their erection at three of our metropolitan hospitals. These facts speak loudly for the efficacy of the remedy to which I have such frequent occasion to refer in the following pages."

TO CORRESPONDENTS.

Argus. Be that as it may, there has not been any statement given of the receipts of the fancy fair, nor is it probable that it ever will be given, unless by *legal* enquiry, instituted by the governors of the charity.

A life Governor. The particulars of the *baker's* account *ought to be* in the hands of the treasurer, we have no authority to give the names of the individuals, whom our correspondent supposes to have benefitted by the loaves and fishes.

There is no mystery about the distribution of *three five pound notes.* One was given for the "flag of truce," the other for electioneering purposes, and the third for rendering a certificate palatable to the examiners.

Otitis. The deaf and dumb shall be duly attended to. There is none so deaf as those that won't hear.

Artophago-Pharmacologist. Dr. Roderick Macleod's bread pills will be more genuine, provided they be compounded, either of the Whiting loaves, Uwin's breakfast bread, the Abernethian biscuit, or the rolls of the Golden Cross baker.

Anti-Homœopathist.—We believe that Dr. Chambers received his appointment through the mediation of his amiable and much lamented friend, Sir William Knighton. Sir Wathen Waller's opinion would be invaluable.

Bull. The veratria is rubbed on by the *doctor* himself every morning, and by the patient every evening. The usual fee is daily expected; but no additional charge is made for the *unction.*

X X. Aloes may be taken in this case from one to five grains in each dose, with or without capsicum.

A Westminster Elector. The cut-throat metaphor was too plebean,—*Vox et preterea nihil.*

J. M. It is a long lane that has no turn.

Inquirer.—The largest dose of the carbonate of iron we have as yet heard of was given in the North London, in anemial cases.

NORTH LONDON SCHOOL OF MEDICINE.—The Summer Courses of Lectures will Commence on Monday, next, the 8th of May at No. 4, Charlotte Street, Bloomsbury, in consequence of the intended Premises not being quite ready for the reception of Pupils.

For Particulars apply as above, or to the respective Lecturers.

MANCHESTER ROYAL

THE

London Medical and Surgical Journal.

No. VI. SATURDAY MAY 13. Vol. I.—(1837.)

NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXII.

GENERAL OBSERVATIONS.

Reasoning in Medicine—Advantages of the Bed-side and the Operating Theatre—Medical Theorising—Great Discoveries of a Medical Tyro—Difficulties of Physiology—Theory noted a Bore—Misfortune of having Splendid Talents—False Philosophy and Wretched Drivelling—Reason at Fault—Crude Notions of the Ancients—Senseless Sarcasms—Gradual Advances of Physiology—Excitements to the Study of Physiology—Great Advances in Natural Philosophy, Botany, Chemistry, and General Anatomy—Newton, Linnæus, Lavoisier, and Bichat—Dr. Gregory on the Theories of Old Women—Dogmatists and Methodists—Chemical Pathologists and Jatro—Mathematicians—Employment of Heat and Cold in Medicine—Animal and Vegetable Food—Pure and Foul Air—Origin of Sialagogues, Errhines, Demulcents, Emetics, Purgatives, Blisters, Diaphoretics, and Diuretics—Hippocrates and Plato on Nervous Disorders—Independent Vitality of the Womb—Adventures of a Uterus—Effects of its Visits to the Liver, Stomach, Heart, and Fauces—Prolapsus Uteri—Ancient Treatment of Hysteria, Epilepsy, and Syncope—Reasons for applying Fetid Substances to the Nostrils, and Aromatic Substances to the Vagina—Origin of Pessaries—Galvanism and Acupuncture—Ancient and Modern Treatment of Fever and Dropsy—Matter-of-Fact Philosophers—Mrs. Shandy and Goodman Dull—Medical Periodicals—Plebeians and Seavans—Former Scarcity of Medical Authors—Extension and Rapid Diffusion of Medical Knowledge—Mutability of Medicine—Requisites for Success in Practice—Inefficiency of Connections, Address, and Intrigue—Professors of Necromancy—Scientific Monsters—Professors of Laputa—The Age of Farce—Justice Shallow—Lynx-eyed Patients—Pompous Practitioners—Buff and Blustering Doctors—Medical Sir Oracles.

It is not uncommon, even in the present day, to meet with persons who despise, or affect to despise every thing like reasoning in medicine, and who hold, or affect to hold, every thing connected with the profession exceedingly cheap, except the bed-side and the operating theatre. But, let us inquire for a moment who they are who, for the most part, indulge in these sarcasms against theorising in medicine. They are generally either very young men, actuated by a strong but mistaken spirit of ratiocination, who having in an evil hour discovered, for their's is the time of life for making great discoveries, that reasoning is quite inadequate to explain satisfactorily many of the functions of the healthy body, and has more frequently led to fatal errors in practice than to the discovery of any useful remedies for diseases, have concluded, for their's is the time of life also for drawing sweeping conclusions, that theory is quite out of place in medicine, and have, accordingly, with great self-complacency, settled themselves in ten minutes into more sound philosophers than persons who have given months and years to a careful and laborious study of the subject. Or they are, on the other hand, oldish men somewhat, perhaps of the dullest; at least, not violently addicted to reasoning at any time, who having succeeded in obtaining a tolerable reputation, and in scraping together, perhaps, a tolerable commodity of money, without reasoning, have voted theory to be altogether useless to a man of the world, and continue to chuckle

with lack-lustre eye and with all the petty malignity of half-conscious imbecility over the superior straight forward understanding which they wish to flatter themselves, and to persuade others, nature has given them, instead of the splendid reasoning talents with which some luckless wights are, to their great prejudice, endowed. It is melancholy to be obliged to listen, at this time of day, to such false philosophy on the one hand, or to such wretched drivelling as this; but as they must be often listened to, so they should now and then be answered.

It cannot indeed be denied that reasoning, on the subject of physiology, is often dreadfully at fault, and that many of the processes going on in the living body are so obscure and complicated as to appear almost unintelligible. But because we cannot comprehend every thing are we, on that account, to acquiesce in total ignorance of those things which may be understood? And how can we ascertain whether any thing is unintelligible or not, unless we frequently and earnestly attempt to understand it? Every other science has advanced gradually to maturity, and it is reasonable to expect that physiology, perhaps one of the most intricate of all, should all at once become perfect, or to discard it altogether because it is not so? The most violent declaimer against medical science cannot deny that it has advanced much since its origin, and that it is still rapidly advancing; but what would now have been its condition had men always argued as he argues? Amid his common-place and hacknied sneers at medical theories in general, such a man is often remarkably brilliant in sneering at the crude notions of the ancients in these matters; but he forgets, in the meantime, that these crude notions are all we should have possessed had the people of every age been all as senseless as he. The subsequent cultivation of the study of physiology has enabled him to see the defects of the ancients; and the continued cultivation of it will probably enable the people of future ages to detect those of modern theorists, till at length the science shall arrive at perfection. The goal is not yet attained, and a great part of the fruit of our labours is perhaps as absolutely out of our reach now, when we are probably only a few feet from it, as it was when we were many miles off; but these few feet will, in all likelihood, be speedily passed over, if we do not flag in the last stage of our journey. The man who has all his house finished except the roof is not much more defended from "the pelting of the pitiless storm" than he who has but just laid his foundation; but he is in a fairer way of becoming so. In like manner, the whole fabric of physiology may perhaps want only a few links, a few rivets, to perfect it, and to amalgamate parts at present apparently baseless, chaotic, and grotesque, into a firm, a consistent, and a beautiful whole. Besides, there is always something infinitely more exciting to an aspiring mind in the idea of prosecuting a study in which something still remains to be done than one in which every avenue to discovery and to the distinction consequent on discovery is closed, and to such a mind, therefore, the very imperfection of the science of physiology, so far from being an argument for declining the study of it, will be one of the strongest arguments for persevering in it. Enough has been already done to show that the attainment of perfection is not impossible; enough still remains to be done to inspire, in any but the most sordid mind, an ardent desire of being in some degree instrumental to the attainment of that perfection.

But it is further alleged, that theorising in medicine has less frequently led to the discovery of useful remedies than to practices absolutely pernicious. This argument can be urged only by those who are either very ignorant or very unjust. It might indeed have been expected, *à priori*, that a science not yet arrived at maturity would not have given rise to any wonderfully useful results; and we might have been content to wait till the good time should come, when the accumulated contributions of all preceding physiologists should be collected into a stupendous whole by some master-mind, who, doing for the theory of medicine, what Newton did for natural philosopy, Linnaeus for botany, Lavoisier for chemistry, and Bichat for general anatomy, should separate the wheat from the chaff, and make every thing work together for an honour and a blessing to mankind. All this might have been patiently waited for, without any fair ground of reproach against the science in question; but such prospective fruits are not all that mankind has even already derived from the study of physiology. It would not indeed be difficult to prove, that so far from no useful remedies having been suggested by theory, there are, in fact, but very few useful remedies which may not be traced to this source. "Among

the least informed people," it has been lately observed, "and in the remotest villages, there are old saws and rules relating to health, sickness, and wounds, which might be thought to come from mere experience; but they are, for the most part, on the contrary, the remains of forgotten theories, and of opinions laid down by the learned of former days." Dr. Gregory used to remark, that it was a great mistake to imagine that old women and ignorant people in general do not theorise, but that, on the contrary, they are for the most part incorrigible theorists. This, however, is not quite the case. Such persons, left to themselves, do not theorise, but are governed in general by the most brutal superstition. When they appear to theorise, they only repeat the theories of the learned, of ages long forgotten; and a person of research may still often recognise, in the really valuable precepts of the sick-room, the tenets of the Dogmatist and the Methodist, the chemical pathologist, and the jatromathematician. Thus, the employment of cold and heat, in the diseases in which they are respectively useful, of animal food in some cases, and of vegetable food in others, sometimes of pure air and sometimes of the reverse; all this has, in most cases, originated in theory; and it is to this that we owe the introduction into medicine of sialagognes, errhines, demulcents, emetics, purgatives, blisters, diaphoretics, diuretics, and almost every other class of useful medicines; to take diuretics as an example. Had it not been for the notion entertained by Hippocrates, that dropsies arose from a preternaturally attenuated state of the blood, and that the natural office of the kidneys was to thicken the blood by drawing off its thinner particles, it is impossible to say how long it might have been ere we stumbled on the use of diuretic medicines, on which we now place our chief reliance in dropsy, and a very similar remark might be made with respect to all the other classes of medicines just mentioned, as well as to innumerable others. We forget all these things, or, what is more probable, we have never known them, when we join in the senseless outcry against the utility of theorising in medicine. When applying hartshorn or other pungent substances to the nostrils, in hysteria, epilepsy, or syncope, or when introducing a pessary to support a prolapsed womb, few, perhaps, are aware that these practices owe their origin to a wild theory, propagated by Hippocrates and Plato, that the womb was a kind of living animal, of a very unsettled disposition, and as often as it found itself deficient in heat and moisture, in its usual quarters it was capable of wandering about in search of more. In these wanderings it was said usually to ascend, for they made very light of its ligaments, touching sometimes at the liver, sometimes at the stomach, sometimes at the heart, sometimes even at the fauces, to the great discomforture of these quietly disposed organs, and the consequent production of a fit of hysteria. On other occasions, however, it was described as descending, particularly when the deficiency of head and moisture seemed to arise from a too sparing gratification of its natural desires, and in these circumstances it sometimes peeped forth from its natural recesses in order to inquire personally into the state of affairs, and to ascertain the reason why it had been so long unsatisfied. "If you want your work done," says the proverb, "go, if not, send;" and in conformity with this precept, the womb was described as sometimes presenting itself without ceremony before the astonished multitude, and thus constituting a prolapse of that organ. Now the said womb, as an animal, was of course susceptible of pleasure from agreeable odours, and of annoyance from the reverse; and, accordingly, when it ascended they attempted to frighten it from above by the application to the nostrils of assafœdida, or any other offensive substance, and at the same time, to entice it from below by introducing aromatics into the genital organs. In like manner when it descended it was to be disgusted from below as well as attracted from above, by the application of fetid substances to the vagina, and aromatic substances to the nostrils. The application of offensive substances to the nostrils soon led to that of any other substances equally pungent, and the advantages derived in hysteria from remedies of this kind soon led to their adoption in epilepsy, syncope, and other disorders, while the pessaries of antiquity, as employed in prolapse of the womb, and which originally consisted of fetid substances, soon gave way to machines of wood and ivory; but still it is to theory, and that too of the most unpromising character, that we owe the introduction into practice of both these classes of remedies. I might likewise add galvanism, acupuncture, and numerous others, as further examples of excellent remedies,

for the introduction of which we are indebted to theory; but sufficient, it is presumed, has been said already to refute the random assertion that practical medicine owes no useful remedies to the prosecution of theory, and to prove that the common-place cant of the empirics, "non post rationem medicinam, esse quæsitam," is as false as it is hacknied and tiresome.

With respect to theory having given rise to practices absolutely pernicious, it cannot indeed be denied that such has sometimes been the case; but if a little theory has sometimes done harm, a little more has commonly corrected it. The cruel practice, for instance, of denying cool air to patients parched with fever, took its rise from the pernicious doctrines of the chemical pathologists, who held that the process by which a fever is expelled is analagous to fermentation, and is therefore to be promoted by heat. But, on the other hand, the practice of freely admitting air was the consequence of the doctrine, that the essence of fever was excess of heat; for which cold was the best as well as the most direct remedy. Again, the barbarous practice of inculcating abstinence from drink in fever and in dropsy took its rise from the doctrine, that in the former it added fuel to the flame, as water sprikled on the fire only serves to make it burn more furiously, and that in the latter it still further diluted the blood, which was too much diluted already. But then, the opposite practice of allowing the free use of liquids in both originated in the notion that they favoured the action of diaphoretic medicines in fever, and of diuretic medicines in dropsy, from the free operation of which the cure of those diseases was principally to be hoped for. But it is superfluous to multiply instances to prove that if theorising sometimes does a little temporary mischief it always sooner or later abundantly repairs it, and I shall presently have occasion to show that if erroneous practices have sometimes resulted from theory, practices much more erroneous have resulted from the neglect of it, and from the idle superstition with which this neglect is always accompanied. From errors arising from the latter source we can have no reasonable hope of deliverance; but if theory occasionally brings a bane, it brings likewise more or less speedily its own antidote: and while in these instances the benefits derived from it are at least equal to the injury, its advantages in others are without alloy, and so numerous and considerable as to furnish us with a ready and decisive answer to the few and meagre arguments which can be brought forward on the opposite side of the question.

But we have still to defend ourselves from the leaden attacks, not of the mistaken philosopher, but of the Goodman Dull, the downright matter-of-fact man, the stupid, indolent, and worldly-minded creature, who, provided he has "succeeded" in the world, in his grovelling acceptation of the term, cares no more than Mrs. Shandy did whether that world goes round or stands still. Such men as these have succeeded in the world as they call it, but it was at a time when the world and the medical profession were not what they now are, and still less what they every day more and more promise to become. The time has been when the doctor was looked upon by his bigotted patients as a being who had become, either by study or inspiration, something almost supernatural. But these were times in which doctors were scarce, and every avenue to medical information being closed against the "profanum vulgus," the elect few had a monopoly, like the monks of the dark ages, if not of learning, at least of the credit of it, and certainly of the loaves and the fishes which were intended for its reward. Doctors are not now what they once were, "rari nantes in gurgite vasto;" but rather like the stars of heaven for multitude; and the persons by whom they live are considerably more behind the scenes. The late rapid march of improvement, a march which becomes more and more rapid every day, has already wonderfully contracted, and promises shortly to obliterate entirely that great gulf which was formerly fixed between the philosopher *ex professor* and the *οἱ πολλοι*. In the first place, the greater diffusion of education which renders every body capable of reading, and then the shoals of publications on every branch of science and literature, and on medicine perhaps more than any other, which emanate from the press every quarter, every month, every week, and almost every day; and many of which come in such a "questionable shape," that they are read by almost every body who can read; and again, the number of scientific and literary societies in almost every town, in which subjects, till lately clouded in pomp and mystery, are familiarly discussed by all classes of people; nay, the improved tenour of the most

every day kind of conversation, in which it is no longer considered indecorous for the *scavan* to laugh with the plebeian, nor presumptuous for the plebeian to dispute with the scavan; all this has already done much towards establishing every man, and in particular every medical man, on his proper level of reputation with respect to his attainments, and will, ere long, it may confidently be expected, entirely sink every claim to notice of all who do not thoroughly deserve it. But not only must the medical men of the present day labour to gain knowledge, in proportion as their patients become better judges of their standing in this respect, but they must labour hard in proportion as the knowledge now to be gained is more deep, more extensive, and more mutable than before. In former times, medical authors were comparatively few; facts and opinions were slowly collected, and doctrines once established required the lapse of ages to undermine and subvert them. At present almost every medical man thinks and writes, as well as reads; the discoveries and notions of every body are diffused, with the rapidity of lightning, and by innumerable channels, through every quarter of the civilised globe, and revolutions in medicine are now so frequent that, when an old student returns to his college ten years after having left it, if he have not in the meantime continually kept up his stock in trade, he hears nothing in reply to his sagest remarks, but Moliere's sweeping answer, "Nous avons changé tout cela," till at length he can hardly believe that he really belongs to a profession, of which he had previously flattered himself he was no inconsiderable member.

Let not a young man trust for success, then, to the same quiescent modicum of scientific information, which peradventure helped forward his grandfather or his father to riches and honour. Let him not trust to connexions, to intrigue, to address, to any thing but a thorough manly knowledge of his profession, and that not of a description in which perhaps any old nurse will excel him after all. Let it not be practical only, but theoretical also. The big wig and the gold-headed cane have long been out. It is long since it was thought necessary (as remarked by Dr. Black), in order to appear a man of deep learning, to resemble a professor of necromancy, or a lethargic philosopher of Laputa, or a scientific monster; and the days are fast approaching, when neither a severe and pompous carriage, on the one hand, nor a bluff and blustering demeanour, on the other, will deceive mankind into the belief, either that a medical man possesses science, or that he despises it. In every thing, scientific as well as political, the age of farce is gone,—the mist of delusion is fading away. In every town and village, where there is any thing worth competing for, a medical man will meet with worthy competitors, and with patients who can judge of his pretensions. The latter will be among the first to see "the bottom of Justice Shallow." If they read nothing else, each will read all he can find about his own case. He will question his doctor upon all the various opinions respecting it; and upon all the arguments for and against those opinions; and, in short, upon every subject connected with it, directly or indirectly. The doctor, if he be a blockhead, will soon betray it; for the eye of the lynx is dull compared with that of an anxious patient, when scrutinizing his medical attendant; and the latter, if incompetent, will be unable to parry, either by artifice or bravado, the home-thrusts he will receive. His quivering lip will refuse any longer to furnish the ready smile. He will be convicted of ignorance and presumption; and will share the just reward of the ignorant and presumptuous—contempt and disgrace!

But it is not his patients alone who will be his judges. The subjects embraced by physiology come home to every man's "business and bosom;" and in every company the medical man is the "Sir Oracle," to whom all appeals on such subjects are made. What, if he cannot meet these appeals? What, if in the first company he enters in the town in which he has set up his brass-plate, he should meet with a dozen persons better informed than himself? An ignorant medical man of the present day (in addition to all his practical high crimes and misdemeanours) must necessarily be a despicable shuffler. No man can know every thing; but he who knows much can afford openly to confess when he is at a loss. An ignorant professional man, on the contrary, cannot afford to be honest. He must equivocate, and hedge, and lie at every turn; and be obliged to take, perhaps during a long life, ten times the trouble in order to appear well informed, which it would have cost him during a few months when a student, really to become so. But all will not do. He will soon see that he is known and despised, and will soon feel himself neglected and abandoned!

LECTURES ON SURGERY,

BY

JOHN HUNTER, F.R.S.

ON THE VITAL PRINCIPLE.

Difficulty of comprehending this Principle—Complicated in its Effects, but simple in its Essence—Not the Result of any perceptible Arrangement of Matter, giving rise to a Principle of Preservation—This the simplest Idea of Life—Illustrations—Erroneous Comparison of Life to mechanical Powers—Action not an essential Property of Life—Life without Action—Vitality of an Egg—Experiments—But Action promotes the Continuance of Life—Apparent Exceptions to the conservative Power of Life—Peculiar Form of Putrefaction in certain Bodies—Death of a Part of the Body previously to general Death—Physiology of the Blood.

Animal matter is endowed with a principle called life in common language. This principle is, perhaps, comprehended with more difficulty than any other in nature, which arises from its being more complicated in its effects than any other; and it is therefore no wonder that it is the least understood. But although life may appear very compounded in its effects in a complicated animal like man, it is as simple in him as in the most simple animal, and is reducible to one single property in every animal.

I have observed that animal matter exists in two states; in one it is endowed with the living principle, in the other it is deprived of it. From this it appears that the principle called life cannot arise from the peculiar modification of matter, because the same modification exists when this principle is no more. The matter separated from life appears at all times to be the same, as far as our senses and experiments carry us. If life arose out of this peculiar modification, it would not be destroyed until the modification was destroyed, either by spontaneous changes, as fermentation, or by some chemical processes; and were it destroyed by the last, it might sometimes be restored again by another process. Life, then, appears to be something superadded to this peculiar modification of matter; or this modification of matter is so arranged that the principle of life arises out of the arrangement, and this peculiar disposition of parts may be destroyed, and still the modification, from which it is called animal matter, remain the same. If the latter be the true explanation, this arrangement of parts, on which life should depend, would not be that position of parts necessary to the formation of a whole part or organ, for that is probably a mechanical, or at least organical, arrangement, but just a peculiar arrangement of the most simple particles, giving rise to a principle of preservation; so that matter so arranged could not undergo any destructive change till this arrangement would be destroyed, which is death. This simple principle of life can with difficulty be comprehended; but to show that matter may take on new properties without being altered in itself as to its kind, it may be not improper to illustrate this idea by such changes in other matter. Perhaps magnetism affords us the best illustration of this point. Iron appears at all times the same, whether endued with magnetism or not; and magnetism does not seem to depend on the formation of any of its parts. A bar of iron without magnetism may be considered like animal matter without life; but set it upright and it acquires a new property, of attraction and repulsion, at its different ends. Now the question arises, Is this any substance added; or is it a certain change which takes place in the arrangement of the particles of iron giving it this property? If we take a piece of glass, it is transparent; we break it into a thousand pieces and it becomes white. Whiteness is not a new matter added to it, but a property arising from its being composed of a number of small pieces.

It was not sufficient that animal matter should be endowed with vitality, the principle of preservation, it was necessary that it should have action or motion within itself. This does not necessarily arise out of the arrangement of parts for preservation; on the other hand, the arrangement for preservation, which is life, becomes the *principle* of action, not the *power* of action, for the power of action is a different one. The *power of action* must arise from a particular position of living parts, for before *action* can take place the matter must be arranged with this view. This is generally effected by the union of two or more living parts, so united as to allow of motion on each other, which the principle of action is capable of effecting when so disposed. A

number of these simple acting parts, united, form a muscular fibre; when a number of these fibres are put together they form a muscle, which, joined with other kinds of animal matter, as tendon, ligament, composes what may be called an organ. Thus, too, by the arrangement of the living particles, the other organs of the body are formed, their various dispositions and actions depending on the nature of the arrangement, for action is not confined to muscle, the nerves also have action arising from the arrangement of their living particles.

The principle of life has been compared to the spring of a watch, or the moving powers of other machinery; but its mode of existence is entirely different. In a machine the power is only the cause of the first action or movement, and thereby becomes the remote cause of the second, third, &c.; but this is not the case with an animal; animal matter has a principle of action in every part, independent of the others, and whenever the action of one part (which is always the effect of the living principle) becomes the cause of action in another, it is by stimulating the living principle of that other part, the action in the second part being as much the effect of the living principle of that part as the action of the first was of the living principle in it. The living principle, then, is the immediate cause of action in every part; it is therefore essential to every part, and is as much the property of it as gravity is of every particle of matter composing the whole. Every individual particle of the animal matter, then, is possessed of life, and the least imaginable part which we can separate is as much alive as the whole.

The first, and most simple idea of life, I have observed, is its being the principle of self-preservation, preventing matter from falling into dissolution,—for dissolution immediately takes place when matter is deprived of it; and the second is its being the principle of action. These are two very different properties, though arising from the same principle, the first being capable of existing independently of the second; for it may be observed, that it is not necessary for the preservation of animal matter that there should be action in all parts, for many parts of an animal appear to have little action, yet they are as much endued with life as the more active parts; such, for instance, as tendons, elastic ligaments, &c.

A fresh egg is a body which, it must be allowed, has no vital action; yet an egg is as much alive as an animal, which I shall endeavour to illustrate by observation and experiment. I was led to this opinion in the year 1757, when I was making drawings of the growth of the chick in the process of incubation. I then observed, that whenever an egg was hatched, the yolk, which is not diminished in the term of incubation, remains sweet to the last, and that part of the albumen which was not employed in the growth of the chick was perfectly sweet some days before the hatching, though both had been kept at a temperature of 103 degrees in a hen's nest for three weeks. But if the egg did not hatch, I observed that it became putrid nearly in the same time that other dead animal matter does.

To determine how far eggs would stand other tests of the presence of the living principle, I made the following experiments:—I put an egg into a freezing mixture about zero, and froze it, and then allowed it to thaw. From this process I conceived that the preserving power of the egg must be lost, which proved the case. I then put the egg into a freezing mixture at 15 degrees, and with it a new-laid one, to make the comparison on that which I should call alive, and the difference in the time of freezing was seven minutes and a half, the second one taking so much longer to freeze. 2nd. I put a new-laid egg into a cold between 17 and 15 degrees; it took about half an hour to freeze: when thawed I put it into an atmosphere only at 25 degrees; it froze in half the time, which it should not have done, nor even in half an hour, if it had not been killed by the first experiment, for the atmosphere now was not so cold as in the first experiment by nine degrees. These experiments show that the egg, when living, has a power of resisting, cold, which, when killed by freezing, it loses.

To determine the comparative heat of a living and dead egg, and to determine whether the former be subject to the same laws with the more imperfect animals, I made the following experiment.

I took a fresh egg, and one which had been frozen, and put them into a cold mixture at 15 degrees. The thawed one soon came down to 32 degrees, began to swell and congeal: the fresh one sunk to 29½ degrees, as happens to living animals, and froze in twenty-five minutes after the dead one. Another reason for supposing it dead was, that before freez-

ing took place it rose to 32 degrees, as other fluids do which are brought below their freezing point.

From these observations and experiments, it must appear that a fresh egg has a power of resisting heat, cold, and putrefaction; and similar results are come to by similar experiments on some of the more imperfect animals, which we shall have occasion to notice hereafter.

It would appear, then, that life is not *action*, but it is continued or supported by *action* when it takes place. Action creates a necessity of support, and furnishes it. It is not necessary that *action* should continue in all parts; in some it is only necessary that the principle and power of action should be continued, but in others it is necessary that *action* should take place even for the preservation of the principle of Action. Action is necessary for the various purposes for which the animal is intended, and if one species of action takes place, it brings the whole into action, as all the parts and actions of an animal body are dependent upon one another. If the heart acts, the lungs must fulfil their part; the stomach must digest, the other parts subservient to this organ must be put in motion, and the secretory organs, nerves, and voluntary muscles. The whole is thus put in motion to produce some ultimate effect, which appears to be the propagation of the species, for preservation (of the individual) cannot be called the ultimate effect.

I have asserted that life simply is the principle of preservation in the animal preserving it from putrefaction; but there is a curious circumstance attending life which would appear to be contradictory to itself. Life is the preserver of the body from putrefaction, and when life is gone putrefaction speedily begins. But this is not uniform; it is sooner in some cases than in others; therefore there must be some other cause than the simple deprivation of life to account for this difference of time. In the most striking instances of rapid putrefaction after death, it does not appear to arise from the process of putrefaction having gone to some length before total or real death took place, for in those who die of putrid fever the smell becomes less offensive before death, and when life is gone they do not go into putrefaction as soon as might have been expected, and not nearly so fast as many who had not the least tendency this way before death. The tendency to putrefaction in those whilst living would appear to be part of the disease, but does not become putrefaction, and on dying they appear to lose that tendency, and to become like other bodies. However, it is disputed whether, in putrid fever, there is really any putrid matter formed.

But there is a process or an action in life which predisposes the body to many diseases, and which becomes the remote cause of them; and there is an action in life which disposes the body to a species of putrefaction (or decomposition) when dead, and very probably death is the effect of this action in these cases. In these cases the body immediately after death becomes emphysematous; this emphysema, though it does not occur during life, would yet appear to be an effect of life, for it depends on disease as the body is dying. It is not genuine putrefaction; for, when the process is ended, the body keeps nearly as long as if no such process had taken place. It occurs immediately after death, or perhaps in the act of dying. The process itself seems to continue when the body is warm; after a time it stops, and the body remains stationary, until it sets out, as it were, for a second time to become putrid. What diseases this is to be classed with I do not know. To ascertain the causes of it with precision, in would be necessary to know the persons when alive, the disease of which they died, and the time when the putrefaction occurred after death. I have myself seen several very remarkable instances of its occurrence. The first was that of a young lady about four months gone with child, who, in March or April, about two or three in the afternoon, was suddenly taken ill with a fit, of which she shortly died. She was opened the next morning at seven o'clock, when the body was found swelled with air extravasated in the cellular membrane; the mesentery, intestines, liver, and heart were loaded with air, the blood worked out of the larger vessels mixed with air, and the body had become very offensive.

Another case of the kind occurred at St. George's Hospital, in a man who had an encrysted tumour in the upper belly of the right rectus muscle, which contained a fluid: it was opened on Friday, and on the Monday following, in the evening, he became ill, and died at one o'clock. He was opened seventeen hours after death, and was found emphysematous, just as in the former case.

This appears to be similar to what is commonly termed sphacelus, being a species of mortification occurring before death, or in the act of dying.

That the mode of dying assists the process of putrefaction is evident in common mortification, which will be noticed when on that subject, and I may illustrate it further by relating what took place in a case of operation for aneurism.

A man at St. George's Hospital had the operation for popliteal aneurism performed. The artery was tied just where it passes through the tendon of the triceps muscle. The case went on well till the sixth day when ulceration took place in some part of the artery which was not united considerable bleeding took place, and recurred several times afterwards, by which so much blood was lost as to become in the end the cause of death. Immediately after the first bleeding, I observed the foot and leg of the deceased side to become cold as high as the middle of the calf, while it was warm about the knee, ham, and upper part of the leg. The lower part of this leg ever after remained cold, and did not in the least change in appearance, from which I conjectured that it was *dead* not *mortified* (for there is a material difference.) I suspected it was *dead* as in common death. He became weaker and weaker every day, and died about four days after. Before he died, the upper parts of the leg, which had retained life a little longer, were mortified, that is, they showed evident signs of such a change taking place; a vesication formed, discharging a bloody serum, and they became darker, as if blood was diffused in the cellular membrane, and œdematus, or rather emphysematus. A very short time after death these parts became putrid, while the lower part of the leg and foot remained unaltered as in common death. Here was a part which just died for want of circulation, therefore no action took place in that part; but above, where there was action, a very different change took place, producing a tendency to putrefaction after total death had taken place. The part which died naturally without any action did not become putrid, while the part in which that peculiar action took place became putrid directly, though it died later. I took off the two *feet* to see which of them would become putrid first; for some time it was difficult to perceive any difference, but about sixteen days after, the foot on the sound side began to turn green, and went on to putrify much faster than the other.

The whole of this part of the case is extremely curious. First, that part of the leg which retained life longest became putrid immediately after death, because during life it took on actions which were productive of putrefaction. The foot of the diseased side, which died early, was not allowed time to take on any actions while living, excepting perhaps that resulting from the stimulus of death, and did not become putrid so soon as the foot on the sound side, which may be said to have died a natural death, and which died later. This I think may be accounted for by supposing that the latter, from surviving some time longer, took on some of those actions which gave the tendency to putrefaction. It may be necessary to explain what I mean by the stimulus of death. Death itself produces an action in all the muscular parts when there is nothing to prevent it. If a man's head be cut off he becomes stiff; he is not stiff while there is real life: for there is a difference between visible life and real life. A part may be living though not in action; but whenever death takes place it excites an action in every part that is muscular: they contract, and this is the action of death. To cease breathing is not the action of death, though certainly it is the first step towards it, and gives rise to the other. The action of real death is that which takes place in the stiffening of the body, and till then it is not dead (except when killed in a peculiar manner—killed universally before the stimulus of death can be given,—and then it remains lax).

I suppose, then, that this foot, which died first from the loss of blood, became stiff; that is, took on action resulting from the stimulus of death, all the muscular parts contracting;—that in the other foot the stimulus of death was in some measure lost from the longer continuance of the diseased state, and the consequent action was less strong. What would be the consequence of this? I take a man in perfect health, and cut off both his legs; to one I give a stroke of electricity sufficient to kill the part before it contracts, and no contraction takes place; the other I leave to itself and let the stimulus of death produce contraction; this latter will not become putrid so rapidly as the former.

Physiology of the blood.—What I have had hitherto principally in view has been the solid animal matter, its formation, and its arrangement by which it is endued with life, composing, as it were, the whole visible body. The fluid part of the compound now remains to be noticed.

Blood is the material by which the whole body is formed and by which it

is supported. It is fluid that it may be capable of moving to the very minutist part of the solid with ease, and may with less difficulty be divided for the increase and repairs of the different parts of the machine; easy of division and separation, to form various secretions, and also to bring back what was superabundant, and to carry off the parts which were useless.

This part of the body has been considered as a passive, inanimate, moving fluid, found every where in the body, deriving motion from the heart for the various purposes of the whole, then returning to to the heart be again circulated. Those who have formed this idea of the blood have no adequate notion of the manner in which it is capable of performing those great uses above mentioned. Some in considering this fluid; have been in a great measure satisfied with examining the spontaneous changes which it undergoes out of the body. This might have led them to draw some natural conclusions, since all natural phenomena are facts, and teach enough of a thing to enable us to draw sound conclusions. Others have attended to the chemical analysis, which teaches nothing with respect to its use in the living body; for blood gives no analysis excepting that of common animal matter. Some inquirers have laid great stress on its appearance when viewed with a microscope, as if forms of parts would explain first principles, which they cannot do unless in operations that are mechanical. This inquiry could be carried no further than to investigate such parts of the blood as have form and opacity, if there are such, and that which appears to have both is called red blood; in a great number of animals, therefore, the knowledge of the operations of the blood in the animal body rests nearly in the same state that it did some centuries ago. The two last points of investigation, namely, the chemical analysis of the blood and the form of the blood globules, though very proper to be made by physiologists, have hitherto explained nothing in the animal economy.

Before I explain my opinion of the blood, it may be not improper first to state some facts from which I draw my conclusions.

I have endeavoured to show that animal matter differs from common matter in many circumstances; that animal matter has a principle peculiar to itself, which I call *life*, and this life is the second step or process of animal matter. Animalization is the first; vivification the second. To prove this, I observed that an animal is increased and supported by many substances which previously had not the properties of animal matter, and of course not the principle called animal life; I observed, too, that it was also supported by substances which were of animal origin, but which had not then the living principle: in other words, an animal can be supported on dead vegetable or animal matter. In the next place it was remarked that these substances, before they can increase or support the animal, must all be converted into animal matter; and lastly, that the substances must be so prepared, or animalized, as to become part of the body, and of course to be endued with the living principle.

It is now necessary to trace these changes in the food till it becomes part of our solids, and observe as we go along when it is most probable that life begins.

Blood is not simply fluid animal matter, it is animal matter particularly arranged, for it differs in every respect from fluid animal matter produced by art. The first change that takes place with vegetable matter before it is rendered blood is its conversion into animal matter. This change I call animalization. With animal matter it might be supposed that no change was necessary to produce animalization; but we find the change, whatever it may be, the same in both; and the process in both is probably similar, for the produce from the digestion of animal matter is as different from common animal matter as anything can be; were it not so, animal substances rendered fluid by chemical operations, as jellies, &c., would answer the same purpose as blood. But the necessity for a total and similar change in both is evident, for out of this change life is to arise, digestion being the first step towards vivification. It may be supposed that the first step in the digestion of vegetables is that of animalizing them, and that they go through the next, of chylification with animal matter; but this we cannot allow, for it would be supposing two different actions going on in the stomach at the same time, which I should very much doubt.

The second process of vivification, must take place somewhere before the blood becomes an active part of the machine. We shall first premise that animalization may take place without vivification—(how far this is the case is not easily determined,)—however, we may say with certainty that vivification cannot be prior to animalization. Let us first trace animalization.

ANEURISM OF THE ARTERIA INNOMINATA,

AND

ORIGIN OF THE SUBCALVIAN ARTERY,

TREATED BY LIGATURE OF THE COMMON CAROTID ARTERY.

To the Editor of The Lancet.

Sir,—I send you for publication in your excellent periodical, the particulars of a case of aneurism of the arteria innominata, and origin of the subcalvian artery, treated by ligature of the common carotid artery, in accordance with the principle first advocated by Brasdor, and lately revived by that enlightened and able surgeon, Mr. Wardrop.

The interest felt by the profession in the cases of aneurism treated by ligature of the vessel on the distal side of the tumour, as first published in your journal, and subsequsntly in Mr. Wardrop's work on aneurism, coupled with the fact, that this is perhaps but the second or third case of aneurism of the innominata in which any attempt at cure by operation has been made, will be the best apology I can offer for the length of this communication, and for what may appear to some to be an unnecessary and tedious detail of the symptoms as they occurred daily after the operation. I have the honour to be, Sir, your obedient servant,

S. W. Fearn.

Derby, Oct. 1, 1836.

Case.—Aug. 22nd. Mary Scattergood, æt. 28, states that her present illness has existed five months, and that it commenced with *a violent fit of coughing*, one night when she was going to bed. Soon after this she experienced a throbbing swelling above the sternum, which, for four or five weeks gave her a good deal of pain. She was bled several times by her medical attendants, Mr. Tomlinson and Mr. Lowe, with relief from the pain in the tumour, and, shortly afterwards, was admitted as an in-patient of the *Derby Infirmary*, under the care of Dr. Bent. I examined the case, whilst in hospital, with Dr. Bent and the other medical officers, and at that time made the following observations: There was a rounded, pulsating tumour, immediately above the sternum, bounded, laterally, by the trachea and the tracheal margin of the sterno-cleido-mostoideus, which was evidently making considerable pressure upon the trachea, near its bifurcation, as evidenced by loud wheezing, frequent cough, as general difficulty of breathing. Loud *bruit de soufflet* was heard in the supra-clavicular space, and a less distinct bruit along the course of the right common carotid. The bruit in subclavian artery was rendered more loud by stopping the transit of blood through the carotid, and when the circulation through the subclavian was arrested, the bruit in the carotid ceased. The tumour itself emitted sounds similar to, and synchronous with, those of the heart. The heart's sounds were natural, and there was no râle in the lungs. The pulse in the right wrist was very indistinct; that in the left was natural as to strength and frequency.

The prevailing opinion at this examination appeared to be, that the disease was an *aneurism of the arteria innominata*, but the surgeon to whose care she was subsequently transferred and one of his colleagues, considered that it was an aneurism of the arch of the aörta, and, of course, that any operation for its cure was quite out of the question.

Having remained in the Infirmary several weeks, she was discharged at her own request.

22. Her difficulty of breathing and cough had of late increased very much, and the acetate of mophia had failed to procure her rest at night. The dyspnœa was aggravated by the slightest exertion, and the wheezing was rendered much more loud.

After her discharge I offered to perform what appeared to me to be the requisite operation, to which proposal she very readiiy assented, as she had a conviction that nothing short of an operation could save her life.

27. The patient came yesterday from Burton in a cart. She passed a better night than usual, and I have this morning made a careful examination of her condition. Her cough is troublesome, and the wheezing very loud; pulse almost imperceptible in the right wrist; in the left it is natural, and gives seventy-two beats in the minute. She is obliged to lie with her head a good deal raised. The tumour is very distinct, and throbbing above the sternum, in the situation first noted, and also in the space between the sternal and clavicular attachment of the sterno-mastoid muscle. Bruit de sufflet

loud in the supra-clavicular region, and still increased by stopping the circulation in the carotid; there is, however, no bruit audible along the course of the carotid. I made pressure for some time upon the carotid, so as to stop the circulation through it, and was pleased to find that her breathing became, in a marked degree, more free and less embarrassed. A similar experiment upon the subclavian did not affect the state of her breathing. The respiratory murmur is natural over the whole chest, as also are the sounds of the heart.

29. I have this morning visited the patient, with Dr. Bent and Mr. Wright, and again carefully examined the tumour and the vessels proceeding from it. We found her suffering very much from the difficulty of breathing, and unable to remain for any length of time in the recumbent position. The experiment of stopping the circulation through the carotid and subclavian was repeated, and the result, so far as the carotid was concerned, was quite in accordance with what happened at the last examination. Each time when the carotid was compressed, the breathing became more tranquil, and when the pressure was removed the dyspnœa instantly returned. A similar compression of the subclavian artery increased the difficulty of breathing, but when the subclavian and carotid arteries were compressed at the same time, the relief to the breathing was much the same as if the carotid only had been obstructed.

It was not difficult, from this and the previous examinations, to determine which vessel to select for the application of a ligature. The circumstance of the circulation in the subclavian artery being already considerably obstructed, and its entire obstruction adding to the distressing symptoms, taken with the further circumstance that pressure on the carotid was followed by a relief from the dyspnœa, seemed clearly to indicate, that in any operation for the cure of the disease, a preference must be given to ligature of the carotid. And here I cannot help remarking the analogy in one respect between this case and the case in which Mr. Wardrop placed a ligature upon the subclavian artery for an aneurism of the innominata. In his case a preference was given to operating upon the subclavian, from its appearing that the circulation in the carotid had almost ceased, and in my patient I selected the carotid, because (with other reasons) the circulation in the subclavian is considerably arrested.*

Operation.—30th. I this day proceeded to the performance of the operation, in the presence of about twenty medical gentlemen, amongst whom were Dr. Bent, Mr. Evans (Belper,) Mr. Wright, Mr. Fox, &c. The patient was placed upon a table, and it was found necessary to keep her in nearly an upright position, owing to the difficulty of breathing, and the cough being so much increased if she attempted to lie down. An incision, about three inches in length, was made, commencing an inch below the angle of the jaw, and extending downwards along the inner border of the sterno-cleido mastoideus. A small artery, which gave no trouble, was divided in this first step of the operation. The cervical fascia was then cut through, and by a little dissection, the sheath of the vessels, with some twigs of the descendens noni, and the omo-hyoideus, were brought into view. After some trouble, owing to the depth of the vessels, from the head being inclined forwards, I opened the sheath above the omo-hyoideus, but was unable to pass a ligature beneath the vessel. I therefore at once divided the belly of the omo-hyoid, and thus exposed much more freely the vessels. An armed aneurismal needle was then passed beneath the carotid, from within outwards, (contrary to the usual directions in such cases,) care being taken not to injure the vein, or to include the par vagum, and, after waiting a short time, the ligature was firmly tied.

Scarcely an ounce of blood was lost, but the different steps of the operation were much impeded by the frequent cough and the sense of suffocation, which considerably distended the veins, and by the necessity of keeping the patient almost constantly in an upright position. The artery was large, and its coats ap-

* "When in a case where either the carotid or subclavian is already obliterated by a spontaneous process of cure, then am I strongly impressed with the propriety of tying the vessel which remains open, all other circumstances being favourable. Of course no such operation would be advisable when there was any reasonable prospect of the spontaneous inactive process advancing; but if, notwithstanding the general treatment adopted, the tumours were decidedly increased, I would not hesitate to tie the open vessel."—Wardrop on Aneurism, &c. p. 83.

peared to be a good deal thickened. The sheath also appeared to be more than usually adherent to the vessels. But one ligature was employed, and the wound being dressed, she was put to bed. She complained a good deal of pain in the right ear immediately after the operation.

Progress.—At three o'clock, an hour after the operation, she was breathing tranquilly, and sat up in bed, and smoked some tobacco. Her pulse was 86; by five o'clock it had risen to 96; and at eight o'clock it was 106. Her breathing from the time of the operation had at intervals been much oppressed, and she had had many violent fits of coughing. The dispnœa was now (eight P.M.) very distressing, and I accordingly bled her to ten ounces, and administered forty drops of laudanum. Her breathing seemed a little relieved after the bleeding, and in a short time she was able to lie down. The pulse rose to 120.

31. One A.M. The patient is now breathing quietly, and has scarcely coughed at all for the last two hours; pulse 100. The pain in the right ear, of which she complained directly after the operation, has continued, but is now rather better.

Eight A.M. Has passed a comfortable night, having slept at intervals a little. She scarcely coughed at all from eleven o'clock last night until seven this morning. There seems now, however, to be a considerable accumulation of mucus in the trachea, and she has been coughing violently for the last hour. Bowels costive. Let her take an ounce and a half of the compound decoction of aloes immediately.

Noon. The cough continued until eleven o'clock. The left side of the face is now flushed and hot, and looks plump and slightly livid; the right side has a shrunk appearance, is pale and cold; the pain in the ear has entirely subsided. To repeat the decoction of aloes, and to have two dozen of leeches applied to the upper part of the chest.

Six P.M. The leeches have bled freely, with evident relief to the breathing. Bowels not open. To have a common purging draught.

Sept. 1st., half-past one A.M. Bowels open twice, freely; she has, however, great difficulty of breathing, and makes a loud wheezing noise. Habeat *haust.* c. *ether. sulph.* ʒss., et *tr. opii.* gtt. xxx.

Eight A.M. Soon after the last visit her breathing became better, and she has passed a very good night; she has slept for two or three hours, and expresses herself this morning as a good deal relieved. Bowels open; pulse 120; the pulse in the right wrist about the same as before the operation,—if any thing, rather more feeble. She says that she cannot now feel the "beating of the lump," which she could distinctly before the operation, but she feels a stoppage at the lower part of the windpipe. Skin cool, face not flushed. She passed the remainder of the day comfortably, sleeping for two or three hours at a time, and she has been less troubled with the cough and dyspnœa.

2. Eight A.M. Has slept but little; her cough has teased her most in the night, though she says her breathing is more free. Has expectorated a large quantity of frothy mucus, and has been repeatedly so sick as to vomit; pulse 120.

Five P.M. The expectoration has, during the whole day, been very profuse, and attended with violent fits of coughing. There is the most marked mucus rattle in the trachea and the larger bronchial tubes. The bruit de soufflet is heard above and below the clavicle, as before the operation, and the pulse in the right wrist has become much more distinct. The sickness has abated; pulse 135. Appl. *Hirudines* xij. sterno, et sumat posteâ *haust* c. *ether. sulph.* ʒss., et *tr. opii.* gtt. xxxv.

Dressed the wound, which appears to have healed by the first intention.

Half-past eleven P.M. Has taken two doses of the ether and laudanum, and appears now more composed. There is less rattle, and the violence of the cough has a good deal abated.

3. Nine A.M. Has slept, at intervals, for several hours, and says that her breathing this morning is more free. There is still, however, a good deal of mucus rattle, and the pulse is 140, and weak. Her strength seems good. To take beef-tea, and to continue the ether and laudanum at intervals of four hours.

Eleven P.M. Has been much more comfortable during the day, though the frothy accumulation continues. Bowels freely open. Continue the ether and the tincture of opium.

4. Has had a good night, and says her breathing is much better than it was before the operation. Thinks the tumour is less; it feels perhaps a little more solid, but the pulsation in it remains about the same.

5. Has been up during an hour, whilst her bed was made; feels much better;

slept six hours during the night; wound appears to be quite healed, excepting at the ligature; pulse 106.

7. A good night, and this morning she is as well as usual; pulse 100; no fever. Pergat.

9. Continues to improve; has had an excellent night, and says she has never, since the commencement of her illness, felt the beating of the tumour so little as she does now; pulse 96. If the circulation through the subclavian be stopped, the breathing becomes shorter and more difficult, and if the pressure be continued for some time, the embarrassment to the breathing is very distressing. Even slight exertion adds to the dyspnœa, but the cough and expectoration are now very trifling. The tumour is considerably lessened, and its pulsations are not nearly so distinct.

11. In good spirits, and complains only of the dyspnœa. The pulsations of the tumour cannot now be felt at the space between the sternal and clavicular attachments of the sterno-mastoid, and they are much more feeble above the sternum. Appr. *Empl. lyttæ.* parti superiori sterni, et cont. *Haust. ether.* et *tr. opii.* h. s.

19. Has been going on well since the last report. The dyspnœa was entirely relieved by the blister, and has not since returned, and the cough is nearly gone. Her nights are good; she sits up during seven or eight hours daily, and her breathing is not affected by the exertion of walking about, or going up and down stairs. The tumour still pulsates, but seems to be gradually diminishing in size. Pressure on the subclavian makes her breathing "thick," as she calls it, but not produce any thing like the distress it would have occasioned a week ago.

27 It is now a month since the operation was performed. The patient walks out daily; her difficulty of breathing is entirely removed, and only returns, slightly, if she walks fast. The tumour still pulsates distinctly, but any pressure upon it does not give rise to dyspnœa, or inconvenience of any kind. She sleeps well at night, and has for the last ten days been entirely without medicine. She has expressed a wish to return to her friends at Burton, and as she appears to be so well, I have permitted her to do so.

The further progress of this case I shall of course be glad hereafter to communicate. I have written to my friend Mr. Tomlinson, of Burton, and requested him to keep an eye upon it, and I shall also myself take an oportunity of seeing it occasionally.

So far even the case is one of no ordinary interest, as it tends strongly with the cases already published, to determine, at all events, *one* important surgical question, *viz.*, the curableness of what has till lately been considered incurable,—aneurism of the arteria innominata; and it also bears upon the general question of the propriety, in every case, of attempting the cure of aneurism by ligature of the vessel on the *distal* side of the disease.

The operation on the present occasion was performed according to the principle originally *proposed* and *adopted* by Mr Wardrop; but there seems to exist some misconception relative to the position which it occupies as a surgical proceeding.

Admiring the talent and sound judgment of Mr. Fearn in reverting to the operation in question, we may point out that his *principles* were not those which were originally explained as being applicable to similar cases. Mr. Fearn, and some other surgeons, have confounded Mr. Wardrop's operation with that which was proposed by Brasdor.

The three different operations for aneurism are those of Hunter, Brasdor, and Wardrop, each essentially differing from one another.

Hunter's operation consisted in placing the ligature on the artery, at a considerable distance from, and on the *cardiac* side of, the tumour.

Brasdor proposed, in such cases of aneurism of the extremities as were so situated that there was not room enough to apply a ligature on the cardiac side of the tumour, to place the ligature on the distal, or what is more technically called the "capillary," side of the aneurism. Though that mode of operation had already been proposed nearly sixty years, it had been performed only three times throughout Europe, on all which occasions it proved unsuccessful, until twelve years ago, when it was revived, and successfully employed, by Mr. Wardrop, in several cases of aneurism of the carotid, for which artery it is undoubtedly particularly applicable.

But the operation which Mr. Wardrop afterwards proposed was founded on a totally *different principle*, and perfectly distinct, from the operations both of Hunter and Brasdor. Mr. Wardrop was led to perform the new operation for the

cure of aneurism, by a chain of reasoning deduced from observations made on the results of Hunter's operation, and also from the phenomena observed in the spontaneous cure of aneurism. Many cases where recorded wherein Hunter's operation was successfully performed, but in which it was afterwards found that the artery on which the ligature had been placed was not sufficient altogether to prevent the circulation of the blood within the aneurismal tumour, the circumtance of a *diminution* in the velocity of the blood within the tumour being sufficient to permit its coagulation to take place for the cure of the disease. He further observed, that when aneurism was cured by a spontaneous process, nature sometimes effected her purpose, not by a *complete* interruption of the circulation within the tumour, but by diminishing it to such a degree as to cause its coagulation. Hence he justly concluded, that in cases of aneurism thus circumstanced, when a ligature could be placed neither on the *cardiac* side of the tumour, as proposed by Hunter, nor on the artery on the *capillary* side of the tumour, as proposed by Brasdor, a diminution in the force of the circulation, sufficient to permit the coagulation of the blood within the tumour, would be effected by placing a ligature on the capillary side *of only one branch* of the diseased artery. When, for instance, the arteria innominata is the seat of aneurism, and when it is impracticable to place a ligature on that vessel, either on the cardiac or on the capillary side of the tumour, Mr. Wardrop conceived that if the circulation, either through the carotid artery alone, or through the subclavian artery, could be arrested, then such dimunition would take place in the force of the circulation within an aneurism of the innominata, that a gradual coagulation of the blood would be ensured, fortifyinghe parietes of the tumour, and so preventing the bursting of the sac. This operation Mr. Wardrop successfully performed in the memorable case of Mrs. Denmark. The soundness of the principles on which the operation is based,—the correctness of the reasoning which led to its original adoption,—and its utility as a surgical proceeding, have received remarkable and important confirmation.—*Lancet.*

THE ANATOMIST.

THE SKULL,

Consists of eight bones, four of which are symmetrical, viz. the frontal, the ethmoid, the sphenoid, and the occipital; and four arranged in pairs, viz. two parietal, and two temporal.

FRONTAL BONE.

Situation.—Upper and anterior part of the skull.

External, or frontal aspect, is convex and arched, and presents a median vertical depression, which marks the original division of the bone into two.

Nasal spine, at the inferior part of the median depression or line.

Frontal eminences, on either side of the median line marking the points of ossification of the bone.

Superciliary arches, two convexities which extend for about an inch on either side of the median line inferiorly.

Eminence of frontal sinuses, between, but a little above the superciliary arches.

Orbitar arches, form the upper edges of the orbits, and present towards their inner thirds the supra-orbital holes or notches, for the passage of the frontal nerves and arteries.

External angular processes, at the outer terminations of the orbitar arches.

Internal angular processes, at the inner termination of the orbitar arches.

Temporal ridges, extend backward and upwards from the external angular processes.

Internal or cerebral aspect, is concave, and presents in the median line a groove, which corresponds to the longitudinal sinus.

Crest, at the commencement of the median groove: it gives attachment to the falx.

Foramen cæcum, at the root of crest, gives passage to a vein from the nose, which opens into the longitudinal sinus.

Eminences and depressions, on either side of the median line, corresponding to the convolutions of the brain.

Orbito-ethmoidal aspect, is irregular, forming on either side part of the orbits, and in the median line part of the nose.

Ethmoidal notch, quadrilateral, articulates with the ethmoid bone by a serrated margin; its edges being cellular to unite with the ethmoidal cells.

Anterior and posterior ethmoidal holes, along the margins of the ethmoidal notch,

giving passage to the nasal twig of the opthalmic nerve and the ethmoidal arteries.

Orbital processes, triangular, and on either side of the eithmoidal notch, form the roofs of the orbits by their smooth concave surface, and on their convex surface are marked by the convolutions of the brain. Their upper and outer surfaces are deep for lodging the lachrymal glands, and at the nasal margin of each is a depression for the reflected tendon of the superior oblique muscle.

Frontal sinuses, at the antero-inferior part of the bone, and between its two tables; they open at either side of the nasal process.

PARIETAL BONES.

Situation, upper and lateral parts of cranium, being quadrilateral.

External surface, convex, and marked by a semicircular ridge, which is continued from the temporal ridge of the frontal bone.

Four edges. The upper is the longest, and joins its fellow,—the anterior joins the frontal bone,—the posterior is very irregular, and joins the occipital,—and the inferior is thin and semicircular, and joins the temporal bone.

Four angles. The anterior inferior is long and curved, and joins the sphenoid bone; upon its cerebral aspect a canal or a groove exists for the trunk of the middle meningeal artery. The posterior inferior angle is grooved upon its cerebral aspect to lodge part of the lateral sinus. The superior angles are rather rounded.

Internal surface, concave, and marked by the convolutions of the brain and the ramifications of the middle meningeal artery, presents along its upper edge a shallow groove, which, with its fellow, accommodates the superior longitudinal sinus; external to this groove are depressions marking where the glandulæ Pacchioni were situated.

OCCIPITAL BONE.

Situation, posterior and inferior part of cranium.

Tuberosity, near the centre of external surface.

Superior transverse ridge, leads from either side of the spine.

Inferior transverse ridge, midway between spine and foramen magnum.

Spine, leads from tuberosity down to foramen magnum.

Foramen magnum, larger internally than externally, is of an oval form, and transmits the medulla spinalis, vertebral arteries, and sub-occipital nerves.

Basilar process, passes forwards and upwards to join the sphenoid bone, is rough inferiorly for the attachment of the pharynx; and upon its cerebral aspect is smooth and concave from side to side to support the pons varolii and basilar artery.

Condyles, smooth and oblong, look downwards, outwards, and backwards, and present roughness internally for the moderator ligaments.

Anterior condyloid foramina, situated before the condyles for the passage of the ninth pair of nerves.

Posterior condyloid foramina, behind the condyles for the passage of veins and twigs of arteries. These are sometimes absent.

Jugular eminences, external to either condyle.

Crucial spine, on the cerebral aspect, and formed by a transverse and vertical line, gives attachment to the falx major by the upper half of the vertical line, in which is a groove for the termination of the longitudinal sinus, and to the falx minor by its lower half; the transverse ridge giving attachment to the tentorium, and also presenting a groove on either side for the lateral sinuses.

Four fossæ, two superior for the posterior lobes of the cerebrum, and two inferior and deeper for the cerebellum.

Grooves for inferior petrosal sinuses, one on either side of the cerebral aspect of the basilar process.

Grooves for the termination of the lateral sinuses, on each side of the foramen magnum above the jugular eminences.

TEMPORAL BONE.

Situation, at the lateral, middle, and inferior part of the skull.

Squamous portion, semicircular, flat, and thin, forming part of the side of the skull and of the temporal fossa.

Zygomatic process, arises by two roots, one anterior bounding the front of the glenoid cavity, the other posterior, which is bifurcated. The process then passes forwards, and presents a serrated edge to unite with the malar bone.

Zygomatic tubercle, is situated at the union of the zygomatic roots.

Trachlea, between the root of the zygomatic process and the squamous plate, for the passage of the temporal muscle.

Glenoid cavity, transversely oval, and

deep anteriorly for the reception of the maxillary condyle, and shallow behind, where it lodges a portion of the parotid gland.

Glassarian fissure, crosses the glenoid cavity in a direction obliquely forwards and inwards.

Auditory process, commences by the external meatus, and leads inwards and forwards to the membrana tympani, and presents an external rugged edge for the attachment of the cartilage of the ear.

Internal surface of squamous plate, is marked by the convolutions of the brain and blood vessels.

Mastoid grooves, at the posterior and inferior aspect of the bone.

Mastoid process, internal to the mastoid process for the occipital artery and posterior belly of the digastric muscle.

Mastoid foramen, posterior to mastoid process for the transmission of a vein.

Mastoid fossa, in the cerebral aspect for the lateral sinus.

Mastoid cells, in the interior of mastoid process.

Petrous portion, extends forwards and inwards, and presents three aspects, being of a prismatic form.

Aqueduct of the cochlea, a minute foramen on the under surface posterior to the styloid process.

Styloid process, long and tapering, descends obliquely forwards and inwards.

Vaginal process, a plate of bone between the glenoid cavity and the carotid foramen.

Stylo-mastoid foramen, between the styloid and mastoid processes for the passage of the portio dura nerve.

Carotid canal, commences in front of the styloid process, and turns forwards, upwards and inwards, and terminates by the side of the body of the sphenoid bone.

Processus cochleaniformis, a thin plate of bone separating two canals, which are situated in the angle between the petrous and squamous portions; the superior of which transmits the tendon tympani muscle; the inferior is the bony part of the eustachian tube.

Superior petrosal ridge, separates the anterior from the posterior surface, and gives attachment to the tentorium.

Depression for Gasserian ganglion, on the anterior extremity of the superior surface.

Hiatus Fallopii, a foramen on the superior surface for the passage of the vidian nerve.

Meatus auditorius internus, on the posterior surface, for the transmission of the seventh pair of nerves.

Aqueduct of the vestibule, a small slit-like opening posterior to the meatus internus.

The superior semicircular canal, forms an eminence on the superior petrosal surface.

ÆTHMOID BONE.

Situation, in the æthmoidal notch.

Crista galli, a perpendicular process which divides the cerebral aspect into two equal portions, and to which is attached the commencement of the falx.

Cribriform plate, on either side of the cristi galli, concave to lodge the olfactory bulbs, and perforated with holes for the passage of the filaments of the olfactory nerves, the nasal division of the ophthalmic nerve, and some small blood vessels.

Nasal plate, descends from the under surface of the crista gall; joins the sphenoid bone posteriorly, the vomer and nasal cartilage inferiorly, and the os frontis and nasal bones anteriorly.

Orbital plate, a smooth square plate of bone situated externally, and forming part of the orbit; in its upper edge are often found two notches, which, with those in the frontal bone, form the internal orbital foramina.

Æthmoidal cells, between the orbital plate and the nasal plate, are ten or twelve in number.

Superior spongy bone, descends in a curved manner outwards from the upper and posterior part of the bone, forming a short channel, called the superior meatus of the nose.

Middle spongy bone, larger and more curved, descends outwards, forming the middle meatus of the nose.

Infundibulum, a smooth groove leading from the anterior ethmoidal cells to the middle meatus.

SPHENOID BONE.

Body, corresponds to the median line, and presents six aspects.

Posterior aspect, is rough for connexion with the basila rprocess of occipital bone.

Anterior aspect, presents the openings of the sphenoidal sinus.

Inferior aspect, presents the *azygos process,* which articulates with the vomer.

Superior or cerebral aspect, presents a fossa, called *sella turcica.*

Lateral aspects, join the great alæ.

Sella turcica, a deep fossa on the cere-

bral aspect of the body for lodging the pituitary gland.

Posterior clinoid processes, two rounded eminences posterior to the sella turcica.

Anterior clinoid processes, two rounded eminences situated external and anterior to the sella turcica.

Olivary process, an eminence between the anterior clinoid processes, and anterior to the sella turcica, on which the optic commissure rests.

Carotid grooves, one on either side of the sella turcica for the internal carotid arteries.

Transverse spines or lesser wings, two thin plates of bone extending forwards and outwards from the anterior clinoid processes, presenting anteriorly a spine in the median line, to unite with the ethmoid bone, and a serrated margin on either side to unite with the frontal bone. Their posterior free edges afford attachment to the sphenoidal fold of the dura mater. The external extremity of each terminates in an acute point, and their cerebral aspect is smooth to support the anterior lobes of the brain.

Great wings, extend laterally from the sides of the body; each presents three aspects, one anterior and smooth to assist in forming the outer part of the orbit, the second posterior, concave, and marked by cerebral convolutions, to assist in forming the middle cranial fossa, and the third external, being divided by a crest, the portion above the crest forming part of the temporal fossa, and the portion below part of the zygomatic fossa.

Spinous processes, extend backwards and outwards from the posterior termination of each great wing.

Pterygoid processes, two on either side, descend from the angle of junction of the great ala and the body. The external is broad and irregular; the internal is long and narrow, and terminates in a hook called the mamular process.

Pterygoid fossa, is the hollow between the pterygoid processes posteriorly.

Foramina lacera, on either side of the sella turcica, are placed between the greater and lesser wings; each gives transmission to the third, fourth, first branch of the fifth, and the sixth pairs of nerves, and to the ophthalmic vein.

Foramina optica, at the roots of the lesser wings, give passage to the optic nerves and ophthalmic arteries.

Foramina rotunda, posterior, and a little external to the bases of the foramina lacera, give passage to the second division of the fifth.

Foramina oval, near the posterior terminations of the great wings, give passage to the third division of the fifth.

Foramina spinosa, in the spinous processes, give passage to the middle meningeal artery of either side.

Foramina pterygoidea, at the roots of the pterygoid processes, for the passage of the vidian nerves.

BONES OF THE FACE.

MALAR BONE.

Situation, at the outer and under part of the orbit, forming the cheek.

External surface, convex, and of an irregular quadrilateral form.

External angular process, at the upper and outer edge, joins the frontal bone.

Maxillary process, serrated, and at inner edge rests on the superior maxillary bone.

Zygomatic process, passes backwards, and supports the zygomatic process of the temporal bone by a serrated edge.

Upper edge, forms the outer and inferior margin of the orbit.

Orbital process, a thin plate of bone, which passes from the upper edge backwards and inwards.

Lower edge thick and uneven for the attachment of the masseter muscle.

Temporal aspect, behind the zygomatic process, is smooth for the lodgment of the temporal muscle.

Two or three foramina, on its cutaneous aspect for vessels and branches of lachrymal nerves.

SUPERIOR MAXILLARY BONE.

Body, quadrilateral, presents anteriorly the canine fossa.

Malar Process, externally and superiorly, presents a rough surface which supports the malar bone.

Nasal process, internally and superiorly, is serrated above to join the frontal bone, and also presents a groove to support the nasal bone. Its cutaneous aspect is perforated by two or three small holes for blood vessels, its posterior aspect is deeply grooved to assist in forming the fossa for the lodgment of the lachrymal sac and duct and its internal or nasal aspect is divided by a ridge, which supports the inferior spongy bone.

Orbital plate, triangular, assists to form the floor of the orbit.

Infra-orbital canal, passes forwards between the plates of the orbital process and terminates in the *infra-orbital foramen.*

Temporal aspect, presents behind the malar process a smooth depression for the temporal muscle and more posteriorly and inferiorly a *tuberosity* which corresponds to the dens sapientiæ.

Posterior dental foramina are three or four small holes which give passage to the posterior dental nerves; and are found near the tuberosity.

Palatine process is thick internally and rough where it joins its fellow, its circumference corresponds to the alveolar processes, and its posterior edge is thin and serrated where it joins the palate bone; its upper surface is smooth and concave from side to side, forming the floor of the nose, and its under surface is rough, forming, with the gum, the greater part of the hard palate.

Nasal Crest, at the union of the palatine processes, projects upwards to receive the vomer.

Nasal spine projects forwards, above and between the central incisor teeth.

Foramen incisivum, is common to both bones and exists inferiorly at the anterior union of their palatine plates; superiorly it bifurcates and opens by two foramina one in each nostril.

Antrum maxillare a large cavity in the body of the bone, bounded above by the orbital plate, below by the alveoli of the molar teeth, anteriorly by the canine fossa and posteriorly by the temporal aspect: externally it corresponds to the malar process and internally it presents a large irregular opening.

PALATE BONE.

Horizontal or palate plate, quadrilateral, is concave and smoth above, and completes the floor of the nose, and rough below where it completes the hard palate. Its anterior edge is serrated to join the superior maxillary bone, its posterior edge is concave and gives attachment to the soft palate, its inner edge is serrated where it joins its fellow and sends a *crest* upwards to support the vomer and its outer edge joins the nasal plate.

Nasal spine projects backwards from the union of the palate plates.

Nasal process, broad and thin, its inner surface is divided into two by a ridge which supports the inferior spongy bone: above and below the bone is slightly concave to assist in forming the inferior and middle meatuses. External surface is rough and marked by the posterior palatine vessels and nerves. Anterior edge, thin, assists to close the antrum and the posterior edge joins the pterygoid process.

Pterygoid process, the thickest part of the bone, of a wedge shape, inclines backwards and outwards; it presents three grooves, a central one smooth which completes the pterygoid fossa and a rough one on either side to articulate with the extremities of pterygoid processes.

Palatine foramina, at the junction of pterygoid and palatine processes for the transmission of the palatine nerve and vessels.

Orbital process, surmounting the nasal process is divided into two by a notch, which forms with the sphenoid bone the *pheno-palatine hole*.

Anterior orbital process, is the largest, being hollow and of a triangular form; it forms the posterior part of the floor of the orbit by its upper smooth surface; it joins the orbital plate of the superior maxillary bone and the os planum of the ethmoid bone by its two serrated edges; its smooth edge looking towards the spheno-maxillary fissure.

Posterior orbital process, articulates with the body and spongy plate of the sphenoid bone and is also hollow.

INFERIOR SPONGY BONE.

Rough and convex towards the septum of the nose and concave externally, presents a free margin inferiorly and is attached above to the os unguis, and to the ridge on the superior maxillary and palate bones. It perfects the nasal duct inferiorly.

OS UNGUIS.

Situation, inner and anterior part of orbit.

Edges serrated to join the os frontis above the maxillary bone below the nasal bone anteriorly and the ethmoid bone behind.

External surface, divided by a perpendicular ridge, presents a groove anteriorly for the lachrymal sac and a smooth surface behind to assist in forming the orbit.

Internal surface, covers in the anterior ethmoidal cells.

NASAL BONES.

Situation, beneath the nasal process of frontal bone and between the nasal processes of superior maxillary bones.

External surface, convex and presents small foramina for blood vessels.

Internal surface, concave is grooved by the nasal nerves.

Superior edge thick and serrated to join the frontal bone.

Inferior edge thin and expanded joins the lateral nasal cartilages.

External edge is the longest serrated to join the superior maxillary bone.

Internal edge is flat and joins its fellow.

VOMER.

Situation in the medium line of nose.

Superior edge grooved to receive the azygos process of the sphenoid bone.

Anterior edge slightly grooved to receive the ethmoidal plate and nasal cartilage.

Posterior edge free, looks towards the pharynx.

Inferior edge the longest, is received into the nasal crest of the superior maxillary and palate bones.

INFERIOR MAXILLARY BONE.

Body is the anterior portion projecting inferiorly into *mental process or chin* superiorly surmounted by alveoli of four incisor teeth,—anteriorly having on each side a depression for muscles—posteriorly, eminences and depressions for muscles.

Symphysis is a vertical ridge in the centre of body.

Horizontal rami. On outer surface of each is an oblique ridge for muscles; on the inner is mylo-hyoidean ridge above which is a depression for sub-lingual gland and below for sub-maxillary gland.—The lower edge is rounded and grooved for facial artery, upper edge has alveolar processes.

Angle is obtuse and rough for muscles.

Ascending rami are thick and round posteriorly — externally smooth — internally grooved.

Coronoid process passes upwards from anterior part of ascending ramus.

Condyle is a process transversely oblong to articulate with temporal bone.

Neck constricted part below condyle.

Process semilunar notch between condyle and coranoid.

Inferior dental foramen situated at interval surface of ascending ramus and surmounted by a *spine.*

Mental foramen situated at anterior surface of bone external to body.

Dental canal traverses bone between the two foramina, and communicates with each alveoli.

OS HYOIDES.

Situation in the anterior part of the neck between the chin and larynx.

Body square, is rough anteriorly for muscles, and smooth behind where it corresponds to the epiglottidean gland.

Greater cornua, pass obliquely upwards and outwards from the sides of the body.

Lesser cornua are very small and pass obliquely backwards and upwards from the point of junction of the great cornua and body.

The bones of the ear are described in connection with the organ of hearing.

The London Medical
AND
Surgical Journal.

Saturday, May 13th, 1837.

WORKING OF THE IMPROVEMENTS OF THE ROYAL COLLEGE OF SURGEONS.

Since the museum of the Royal College of Surgeons was thrown open to the Public we refrained from offering any observations upon the new building, the classification of the preparations, or the attention of those who are commissioned by the Council to superintend the new arrangements, until we had satisfied ourselves, by repeated visits, of the manner in which the entire was conducted.

Of the building itself, it is sufficient to say that ample accommodation has been provided for the display, not only of the labours of the immortal Hunter, as well as for the other additions which have been made, from time to time, by the College, but from the excellent manner in which the temperature is maintained, security is given to the preservation of the numerous specimens contained within its walls, and the plan on which the whole building is lighted, shews the various preparations to the best possible advantage.

Too much praise cannot be given to the Council for their liberality by opening their doors to the Profession at large, and to the Public generally, by an introduction from a member. When it is considered the great length of time that the Hunterian Museum was confined to the inspection of a select few of the corruptionists, a proceeding of the greatest danger to the community, and a strong temptation to even the most honest individuals to avail themselves of the labours of another, a fraud which cannot now be at least so easily practised upon the Public.

With regard to the attendance of the officers, too much praise cannot be given them, for their assiduity and polite attention, and their anxiety to give the visitors every information on the various preparations, whilst the voluminous catalogues, drawn up with such simplicity and skill, render, even to the student, every facility of acquiring an acquaintance with the vast field of knowledge which this magnificent collection offers to his mind for investigation.

In our visits, we had not the pleasure of meeting the able and learned Professor of Comparative Anatomy, Mr. Owen, as often as we could have wished, but his absence at this time can be well explained, when we reap, in a short hour, the "concentrated essence" of labour, which must have cost him the most extensive investigation and the deepest research. Without a desire to make an invidious comparison, the lectures which Mr. Owen has already delivered form a striking contrast with those morbid ossific compositions which immediately preceded them. We had almost neglected noticing the *constant* presence in the Museum of one whose affability and desire to impart information have never been surpassed. Mr. Clift, like a second Simpson, gracefully moving under the azure canopy at Vauxhall, "in the 65th year of his age," seems to live only in the atmosphere of the building which contains the Hunterian collection, and which we hope he will continue to adorn by his presence for many years to come.

We were quite unprepared, notwithstanding the investigations of Mr. Warburton's Committee, for the gigantic strides in liberality which have induced the Council to establish a reading-room. The room is now open to the members three successive evenings in every week, from seven to ten o'clock; and though this limited period may have appeared to the learned members of the Council quite adequate to supply the public appetite for intellectual food, and afford them quite sufficient time to ponder over the luminous contributions which are so abundant in the pages of the *Lancet* and the *Medical and Surgical Journal*, and prosing fabrications of the *Gazette*, yet this was but a sparing allowance, and quite inadequate to glut the bulimic appetites of the commonalty. When the doors of the reading-room were first thrown open, many distinguished individuals thronged to partake of the intellectual feast, and we can only account for the gradual, though progressive diminution to the limited hours, which the Council have appropriated for the repast. It is indeed our painful duty to state, that of the multitude who thronged the portals of Lincoln's-Inn Fields, only *one* has had the courage to continue his attendance in the room at the prescribed hours, in justice to whom it is but fair to state, that he has been induced to continue his attendance, not being able to satiate his appetite, but because he can partake of fare which he could not procure elsewhere but at considerable expense.

The attention of Dr. Willis in the library needs no comment. His wonted courtesy and kindness have long given universal satisfaction.

The accommodations for the pupils and members who have business to transact at the College, are in keeping with those of the museum and library; whilst the urbanity of Mr. Belfour, and those in his department, is, if any thing, more remarkable than when he graced the office in the old building.

To refer once more to the reading-room. We trust the Council will see the necessity of rendering it more worthy of their boasted interest in the welfare of the members, to enlarge the period of attendance, and to make it much better known by more public notification than has hitherto been given.

GENERAL CONSIDERATIONS ON THE DISEASES OF CHILDREN AND THEIR THERAPEUTIC.

Hospital for sick Children.

Of all the diseases observed in the hospitals of Paris, none seem to call for more special attention, or to afford greater interest to the practitioner than the study of diseases incident to childhood: there is an hospital in Paris expressly adapted for sick children. No idea can be formed of the number and variety of acute and chronic affections met with in this establishment, especially in the ward we intend to review, which may be considered one of the most curious in the hospital, on account of the number of children, and the nature of their complaints. Dr. Baudelocque's wards are divided in acute and chronic diseases. The first division contains about sixty beds, occupied by children from two to fifteen years of age. A ward of thirty beds is destined to older children; another ward contains children under five; and nervous diseases, epilepsy, chorea, convulsions are attended to in another ward.

The division of chronic diseases composed af three small wards contains those patients who are scrofulous, or who have diseases of the skin. This part of the service is the most interesting, owing to the pains M. Baudelocque takes in the treatment of these children, and by the variety and multiplicity of medications he employs. All the patients in this ward are girls.

Among affections so numerous, and so various, we shall be puzzled which to choose; we shall put aside all facts which are not immediately practical, and merely make our readers acquainted with what is eminently useful.

M. Baudelocque does not seem to approve of active medications in acute diseases of children; he is of opinion (excepting in certain circumstances we shall take care to note) that when these juvenile patients are put in a suitable condition, the disease goes through its different stages, and nature powerfully assists the cure. For bronchitis, angina, and in general all eruptive diseases, the best remedy is to observe children, to put them on moderate diet, and keep them from all stimulating causes. If for example, a child has the hooping cough, he does not bleed, unless the young patient be very strong and full, or that there is some serious complication; a moderate diet is prescribed, emulsions, and a few doses of white oxyde of antimony. With this treatment the attacks become slight, and the hooping cough gradually disappears.

The same remarks are applicable to angina preceding scarlatina, bronchitis which is generally the forerunner of the measles. Blood-letting is very seldom prescribed in these cases. Dr. B. thinks it is better avoided, and he observes that in cases where leeches have been recommended, and that the recommendation has been neglected, the patients have nevertheless been cured.

We must however state that Dr. B. has more frequently recourse to bleeding in his private practise than in the hospitals: the children of the indigent are of a much weaker constitution, and seldom need the same antiphlogistic treatment as the opulent.

Dr. B. does not think an acute malady can be got rid of by profuse bleeding. Its intensity may be diminished, its complications decreased, but to arrest it suddenly by bleeding is not possible. In a typhus fever for instance, neither sanguine evacuations, nor purgatives can arrest the progress of the disease, it must

have its course, and if bleeding be not injurious, it is at all events useless.

But however cautious and timid Dr. B. may prove in acute diseases of children, he is equally active in the treatment of chronic diseases, employing alternately, the most active and varied medications, and neglecting none of the resources of medicine. The division of chronic disease is not assuredly the least interesting, and before we trace their particular history, we must cast a rapid glance on the different medications in general use.

Dr. B. frequently employs purgatives in the chronic diseases of children; there are certain affections for which he only prescribes opening medicines, and for most others, purgatives are nearly always combined with the different remedies he recommends.

Purgatives considered as a method of treatment, are usually given to children, and all other medicines are excluded, when they have for any given time been accustomed to take any medication. Aperient draughts are then to be administered twice a week; but if the child be under any other course of medicine, it must be suspended the day on which the purgative is taken.

These purgatives may be continued for several months without any fear of accident, the children do not appear to suffer, their appetite is not diminished, and we have seen several scrofulous patients who during two or three months were regularly purged twice a week, without the digestive tube having the least suffered from it. Certain diseases have been completely cured by this simple medication, others have seen their symptoms considerably amended, and the cure has been rapidly achieved by means of other remedies.

It is rather difficult to make children take medicine, owing to its disagreeable taste; D. B. has found the following prescription made up with coffee, answer the desired purpose, for it is by no means unpleasant to children, to whom it should be given early in the morning, and their breakfast sometime after.

Senna ʒiij.

Water four ounces.

To be mixed with coffee, to which a little milk should be added.

This purgative has a good effect, children take it with pleasure, and it generally procures eight or ten stools without colics.—Manna, or sulfate of soda, is sometimes substituted for senna.

It is rather the fashion at present to prescribe syrup of acorns, which was lately termed a *precious tonic*.

This syrup is extracted from acorns, torrefied and reduced to a powder, of which a syrup is made.

A decoction of hops so frequently prescribed for children, and taken so reluctantly, has been replaced by *oxymel scillitic*.

Iodine, extract of hemlock, arseniate of soda, barytes, &c. &c., are medications frequently employed by Dr. B. Our readers will be enabled to appreciate the value of these substances by the numerous cases we shall bring forward. In the mean time we shall say a few words on the manner of administering them.

The extract of hemlock is generally given in doses of four to twelve grains; which dose is increased gradually, and as much as thirty or forty, or even sixty grains may be taken. No accident had ever occurred from the administration of this medicine, when not long since, all the patients who had taken it, were on the same day seized with head-aches, vertigo, and other symptoms of poison. These accidents were attributed to a change in the mode of preparation, the apothecary having that day made use of a new extract.

The arseniate of soda is at this present time prescribed for a girl of twelve, who has a lupus on her nose. After removing the scab with soothing poultices, cauterization with hydrochloric acid has been resorted to, the treatment with arseniate of soda, was then commenced, and we have not yet had sufficient time to judge of it correctly; at a future period we shall give an account of its results.

A little girl of eight years old, having a white swelling of the ileofemoral articulation, takes muriate of barytis, two ounces of solution of muriate of barytis in two doses, one in the morning the other in the evening, each ounce of solution contains one grain.

Although muriate of barytes has been lately given in enormous doses, M. Baudelocque has never been able to prescribe more than four grains without danger. Chronic opthalmia are very numerous—several practitioners have lately prescribed tincture of Rhus toxicodendron.

Children affected with chorea and epilepsy are also very numerous. M. Baudelocque has obtained great success with sulphuric baths in St. Vitus' dance; he has also administered sulphate of quin-

ine to a girl of twelve, who had long been subjected to vertigo, these attacks were very similar to those of chorea, her arms and legs were convulsed; she recovered in a few minutes, and appeared in a state of perfect health.

Generally those children treated in the wards of chronic diseases, are subjected to an alimentary diet, and eat according to their appetite; unless a complication arises, they have wine and meat. Those who are affected with acute diseases are very seldom put on low diet, experience having proved that the privation of good nourishment during any length of time, is very prejudicial to growing children. Thus milk, eggs, vegetables, meat, are given with due regard to the digestive faculties of the juvenile patients.

ON THE CURE OF HEADACH BY THE APPLICATION OF LEECHES TO THE SCHNEIDERIAN MEMBRANE.

By John Walker, M.D.

The frequent failure of general bleeding, by the application of leeches to the head, and likewise of counter-irritants in relieving the severe frontal headachs arising from congestion of the brain and its membranes, induced me to give extensive trial to the detraction of blood from the ethmoidal vessels, by means of leeches applied to the schneiderian membrane (as recommended by Mr. Wardrop in his Treatise on Blood-letting), and I have found the results very generally beneficial.

As the pericranium is almost entirely supplied with blood vessels from the neck, it is natural to conclude that blood detracted from it, will not in general alleviate the symptoms arising from internal congestion and other painful affections of the cerebrum, unless it it taken in such quantity as will greatly reduce the force of the circulation, which would require the application of a large number of leeches, attended with great loss of time and inconvenience; and I am inclined to think that the beneficial effects frequently attributed to the application of leeches to the head, are to be ascribed in many cases to the employment of general blood-letting, cold applications, and other collateral measures.

In abstracting blood from this part, we only follow the plan adopted by nature, in relieving by epistaxis, not only congestion of the brain, but apoplectic and other attacks. Even in the more remote parts of Scotland, when a person is seized with apoplexy in the absence of medical aid, some one of the bystanders endeavours to produce epistaxis, by inflicting a smart stroke on the patient's nose, thereby relieving the gorged state of the cerebral vessels. Mr. Wardrop mentions the case of an empiric, who had apparently become famed for his successful treatment of headach, which consisted in scarifying the schneiderian membrane. I have found most benefit from this mode of treatment in the painful headachs peculiar to pregnant females; in those arising from irregularity or total suppression of the catamenia in plethoric habits, and in a few depending upon biliary derangement.

The following are only a few cases selected from my notes:—

Mary Wilson, æt. 19. Catamenia became suppressed after exposure to wet and cold, accompanied by considerable pyrexia and severe frontal headach, for which she was submitted to treatment, but with only partial relief. When I first saw her, six weeks afterwards, she still complained of the severe frontal pain, and the catamenial discharge did not flow; she was now repeatedly bled, had leeches frequently applied to the temples; the head was shaved and blisters applied to the back part, which along with the exhibition of medicine, and the use of other means for the purpose of restoring the catamenia, had no effect in abating the pain. A leech was then applied to the membrane of the nose, on each side of the septum, and the bleeding kept up by means of cloths wrung out of warm water, which had the effect of entirely removing the frontal pain; and although her occupation was that of a factory girl, it had not returned at the expiration of three months.

Mrs. Wallace, æt. 24.—In the fifth month of pregnancy, (of her first child,) complained of constant frontal headach. Bowels, &c., regular. A leech was ordered to be applied to each side of the septum of the nose, but being afraid (as she said) that they would creep up her nose, she only applied one, which was followed by complete relief from pain on the corresponding side, and the next day, when a leech was applied to the opposite or painful side, the cure was complete. I have repeated this experiment several times, and with generally the same result.

Mrs. Gillespie, æt. 56.—Has been troubled with asthma during the last twelve years, and has complained of dis-

tressing headach for a period of three years, with a turgid state of the conjunctival vessels, flushed countenance, and a sensation of violent pulsation in the head, so troublesome as at times to prevent sleep. She was requested to apply two leeches to each side of the septum, but could only put on three, the hæmorrhage from which continued the greater part of the night. Next day she expressed herself nearly free from pain; twenty-four hours afterwards other two were applied, which entirely removed the symptoms. In this case the head symptoms returned about every six weeks, when the bleeding was always repeated, and with its usual good effects.

Mrs. Cochrane, æt. 47.—Fifteen months since catamenia became irregular, and for the last three months had entirely ceased. The principal cause of complaint at present is acute frontal pain; two leeches were applied as in the former cases, when she expressed herself well.

Mrs. Bowie, æt. 53.—Has frequently been the subject of all the premonitory symptoms of apoplexy, from which she has as often been relieved by bleeding, &c., but has never been totally free from frontal headach. Eight days since had a return of her head symptoms, from which she was relieved as formerly, but still complained of the constant pain; two leeches were applied to the septum, which in this case bled so profusely that the blood trickled down in a stream; before this troublesome symptom subsided the leeches were applied several times.—*Continental and British Medical Review.*

OBSERVATIONS AND PRACTICAL CONSIDERATIONS ON THE GANGRENOUS STOMATITIS.

The gangrenous inflammation of the mouth in young children, is very common in large towns, especially among the poorer classes. It is, therefore, by no means surprising there should be so many cases of it in the hospital for sick children. During the last six weeks, four affections of this kind have been treated by Dr. Baudelocque, and notwithstanding the danger of this disease, proved fatal only to one of the four children. We shall give a rapid sketch of the four cases, and show the plan of treatment adopted by Dr. B.

On the 13th of September, a little girl, six years and a half old, was admitted into the hospital, with a cankerous affection of the mouth. This child had been ill for a week, and still had remains of the measle rash; the face was much swelled, the left side edematized, the eyelids nearly closed: in the middle of the cheek there was a sore rather larger than a shilling: inside the mouth was an ulceration, and the whole depth of the cheek was invaded; lower down there was another sore; a dark excretion, of very fetid odour, flowed from the mouth; the gums were swelled and bleeding. Two large sinapisms had been applied to the legs during the measles, and there remained two large gangrenous sores invading the chief part of the teguments of the legs. Auscultation showed that the lungs were seriously affected. The pulse was slow, scarcely perceptible, and a continual diarrhea contributed to weaken the patient.

Although there could be but little hope of recovery, Dr. Baudelocque had the internal sore cauterized with hydrochloric acid, and externally with a hot iron; the eschars were then to be sprinkled with the powder of chloride of lime. He also prescribed a mixture of a drachm of acetate of ammonia, and an ounce of syrup of quinine, two moderate injections of bark, and the sores of the legs to be powdered with the chloride of lime.

The cauterization was renewed several times. The following day the pulse was better, there was no swelling round the cauterized parts, and the face was less edematized.

On the 26th, the cauterization was again made on the internal sore; four ounces of Malaga wine to be taken by spoonsful, were prescribed; the syrup of quinine, the acetate of ammonia, and other means indicated were continued, but the young patient sunk, became delirious, and died on the 28th.

A post mortem examination was made the ensuing day. The periostes of the whole side of the lower jaw to the articulation was detached. The lungs were hepatized in various degrees, and sprinkled with miliary tubercles; the digestive tube was empty.

There was not the slightest chance of saving this patient: the state of the lungs rendered all care useless.

The cauterization, however, seemed to have a good effect on the stomititis, which made no further progress, the fetid odor no longer existed, a degree of reaction had taken place, but the double pneumonia and excessive suppuration arising from the gangrenous sores on the legs, necessarily led to a fatal termination. In the other three cases this cauterization has been followed by a happier result, though one child was very young, and her state most serious.

A little girl, of five years old, had several gangrenous spots on the cheeks and upper and lower gums. This disease had also made its appearance during the measles. There was cough, fever, diarrhea, and the running from the mouth was so fetid, that it was difficult to examine it.

All the gangrenous parts were touched with hydrochloric acid, and then powdered with chloride of lime. Syrup of quinine, tonic, and antiseptic injections were prescribed. The fetid odour soon disappeared, and the gangrenous spots did not increase. The upper and lower teeth fell out with the mucous, and a large splinter of the maxillary bone, so that after the child's recovery there was a double solution of continuity which seemed to result from two semi-elliptic sections made in the upper and lower jaw.

This cure is undoubtedly very remarkable, and quite unexpected for children of the same age taken into the hospital, and having any severe illness seldom recover.

The other two cases offer but little interest after those just related. A little girl admitted into the hospital, had been ill three months, there was a considerable swelling of the under maxillary ganglia on the left side. When the mouth was opened, several ulcerations of the cheek, the palate, and the tongue were visible; this affection appeared local. The ulcers were touched with hydrochloric acid, then covered with powder of chloride of lime. A gargle of honey and syrup of bark was prescribed.

The progress of this stomatitis was arrested after the second cauterization, and the young patient left the hospital, cured at the end of the week.

The fourth case is that of a little girl, who had two large ulcers in the cheek and on the tongue; the same treatment was followed as for the other child, and she seems to be in a fair way of recovery.

In the two latter patients, the stomatitis existed independently of any other disease, which does not often occur. This affection is almost always concomitant with an eruption, and especially with the measles, and there are generally serious lesions in the lungs, so that the stomatitis may be considered a dangerous complication, which hurries on the fatal termination.

The digestive tube does not in general show forcible marks of inflammation, and the purging is apparently owing to deglutition of the matter secreted by the gangrenous mucous membrane of the cheek. The preparation of bark appears to be useful in moderating this diarrhea. *Op. cit.*

BIOGRAPHY OF VELPEAU.

Biography seems, perhaps, more essential in the Medical Profession than in any other, for it is not only useful, but indispensable, to be acquainted with the character of the individual who brings forward a case before it is admitted into science; progress depending, in a great measure, on the purity of its origin. We are well aware that it is often easy to judge from a good analaysis of a case, whether the statement be correct or not. Yet it is always a painful and laborious task, requiring much time and attention. Without such confidence no progress can be made even in the most exact sciences. J. L. Petit's work would have been much less useful, if the high character and scientific probity of this celebrated surgeon had been less known. However incomplete the cases he relates, they are equivilent to assertions, and given by a man whose word no one ever doubted, they are of real scientific value; while the cases published by Garengeot, for instance, never escape suspicion, particularly since the case of the nose that was bitten off, trodden under foot, picked up in a barber's shop, and then successfully grafted on the unlucky face to which it originally belonged. This indeed is a most wonderful specimen of the powers of adhesion!!!

If surgery can boast of having some few worthy imitators of L. Petit, it must also be admitted that there are far more of Garengeot's descendants, whose number and whose skill increase daily, particularly in those countries where they are at liberty to practise and make as many dupes as they please.

The biography of men of merit is always interesting, particularly if drawn

by an able pen, and we think our readers will find that M. Vidal de Cassis has fulfilled his task in a most able manner, and we shall therefore lay before our readers his life of Velpeau.

Contemporary biography has an advantage which those who are interested in it, do not sufficiently appreciate. Most men, however upright and honourable they may be, have their enemies, who may give way to their evil passions, and losing sight of all justice, endeavour to cast a stain on those who least deserve it. If the accused has gone through life honourably, he may bring his detractors before the public, and appeal to its judgment. This system of defence is by far the most moral, and the only one to be adopted by an estimable man unjustly accused. If such be M. Velpeau's situation, he may rejoice at it; no one is better able to show what a noble mind can effect. As a surgeon he has risen to the greatest eminence, without ever injuring his brother practitioners, or owing any thing to patronage.

We wish it to be distinctly understood, that in giving the biographical sketches of the eminent professional men still living, we shall rather consider their scientific, than their personal character; and under no circumstances give place to vituperative feelings: our sketches will be selected from men who owe their success in life to their own merit; thus we shall endeavour to encourage the young, or less fortunate practitioners, by laying before them lives of men who, by their actions, evince their elevation of soul, great mental power, and nobly acquire riches and fame.

When Velpeau first arrived in Paris, his poverty was very great, necessity compelled him to make the nicest calculations, in order to provide for his daily wants. Dupuytren's poverty, when he began life, was affluence when compared to Velpeau's. Dupuytren was patronized; Velpeau was indebted to Providence, and his own exertions, for his advancement.

No man was ever more laborious than Velpeau. In 1820, he was admitted to the hospital St. Louis, in Paris, having previously spent four years at Tours. He immediately became a candidate for the *Ecole Pratique*, was elected, and became a professor almost before he was known as a pupil. The ensuing winter he gave lectures on anatomy: he was not led by vanity to make these exertions, but by the necessity of gaining a livelihood, and an anxious desire to obtain information; both these feelings were equally powerful; his industry knew no bounds. In 1821 he was rewarded for his exertions, and received the prize of anatomy and physiology, and was also named demonstrator of anatomy. He then gave lectures on descriptive and surgical anatomy, but was far from having that command of language he has since acquired.

His desires being very moderate, his manner of living frugal, he soon found himself in good circumstances,—thus being relieved from the uneasiness necessarily attendant on poverty, he gave himself up entirely to his professional pursuits. He then taught operative medicine, and improved himself greatly while teaching others. In 1822, he commenced his researches on embryology, and began with the preparations commanded by the faculty. Velpeau quickly perceived that man, in his intra-uterine life had not been sufficiently studied: this was a fine field for cultivation, and the labour it required did not prevent his undertaking it, and his remarkable ingenuity has brought him the richest collection of embryos, and has given to anatomists a science of which some of the elements were scattered abroad, and others very difficult to find. Velpeau is fully aware that embryology has not reached its apogee; but what science can be said to have attained perfection?

Velpeau's ambition and hopes were realized in 1823. He was then elected, *Agrégé à la Faculte, et Chef de clinique chirurgicale* at the hospital of *St. Come*, now called *clinique de la Faculté*, and formerly (out of irony) *Hospice de perfectionnement*. Velpeau remained there four years, and attended operations performed by the first surgeons. He used the knife also.

In 1825, Velpeau began to publish his *Anatomie des Regions*, a work abounding in the most exact details, but wanting in method; and if this work showed the author's want of experience, it also displayed a spirit of investigation and application seldom met with in works of anatomists, who too often consider the organs in an abstract manner. Velpeau wished to make a practical anotomy; this intention is evident throughout the work —this praiseworthy tendency to unite anatomy and surgery, has led him occasionally to mistake the one for the other. Nevertheless, an attentive perusal of this work always brings forth fruits that might be vainly sought in publications of the same kind, edited with more

art. This work was brought out in 1826.

In 1828, Velpeau gave up the lectures on descriptive anatomy, and immediately commenced two others: one on surgical anatomy, the other on external pathology. His work on "*Accouchements*," came out the following year, and it is undoubtedly his best production. Velpeau was not yet satisfied, he wished to have his opinions inserted in the medical journals, and he gained his point: he never attacked any one, but was glad to have an opportunity of self defence. His friends wished him to confine himself to science, with which he was perfectly acquainted, but a slight knowledge of the human mind suffices to show the improbability of his so doing. Man is naturally led to undertake what he is the least able to perform. The finest painter of the age insists on playing on the violin, of which he knows little or nothing, but would be quite offended if he were told so.

Whether Velpeau became a journalist through taste, necessity, or error, is not the question: he was a great favourite with the press, his merit was appreciated, his works extolled, his lectures praised. Velpeau then became a candidate for the professorship of physiology, and afterwards for the places obtained *justly* by J. Cloquet, Gerdy, and P. Dubois. Velpeau was always generous to his antagonists; he felt his own strength, he knew his own talents, was supported by the press, and a favourite with the public; he gained his object, and obtained the professorship. It is useless to inquire why a man so idolized one day, should be insulted the next, and what can give rise to the opposition with which Velpeau sometimes meets. Has he forgotten his own origin?—Is he ungrateful to his benefactors? Has he been unjust to his brother practitioners? We think not, his works prove the contrary: and one of their greatest defects, are the numerous citations contained; a sense of justice and benevolence, has thus multiplied them. Velpeau has given to each his due, and always seized an opportunity of bringing forward the name of a *young professor scarcely known*. Thus Velpeau having through his own laudable exertions reached the summit of his profession, like most medical men in France, generously lends his aid to those who commence their career, and gives proofs of his noble mind and feeling heart.—*Op. cit.*

ON URINE.

Some attention was paid to the number of times that a person enjoying good health, and in the middle period of life, is in the habit of discharging urine in twenty-four hours. In the same person we have observed it to vary, without any sensible drangement of the system, from six times to fourteen. I know one gentleman who enjoys very good health, and only discharged his urine twice in twenty-four hours. Nine times is a very common number. The quantity discharged at a time is also very various. The greatest quantity which I have observed a person in perfect health, and under no particular restraint, to discharge at once, is $25\frac{1}{2}$ cubic inches, or somewhat less than a pint: the most common quantity is from seven to nine cubic inches.—*Annals of Medicine.*

I made a comparison between the liquid taken into the stomach and the urine, for five consecutive days. Some days the urine exceeded the liquid food, but, upon the whole, the drink was to the urine as 11 to 10. On one day the drink was to the urine as 100 to 68·2; on another, $73\frac{1}{4}$ to 102·02: nothing, therefore, would be more inaccurate than the inferences drawn from a comparison of the drink and urine for a single day. If my induction be drawn from a sufficient number of days, it is evident that the drink, upon the whole, exceeds the urine by one-tenth part; consequently, if the average quantity of urine be 3·307 lbs., the average quantity of drink will be 3·6377 lbs., or will exceed the urine by nearly one-third of a pound.

I have found diabetic urine to redden litmus, precisely as healthy urine does, though not so powerfully, because the acid is in a much more dilute state.

I may here notice a very remarkable case of diabetes in the Glasgow Infirmary in 1833. The patient was a middle-aged woman, who voided 50 pints of urine in 24 hours. The urine was almost colourless, and had a specific gravity of 1·0285 at 50 degrees; 2597 grains were evaporated to dryness in the vacuum of an air-pump over sulphuric acid; the dry residue weighed 158 grains; or 1000 grains contained 60·8 grains of dry residue. This residue was snow-white, and very adhesive. It had assumed the form of a hollow vesicle, about six inches in diameter, which collapsed when the air was admitted. It was very slightly sweet, exceedingly viscid, and adhered strongly to every

thing with which it came in contact; when digested in alcohol, urea was dissolved, and the sugar remained of a white colour; it blackened when very slightly heated, and, when strongly heated, emitted the smell of burning feathers. This sugar would not crystallize, but it fermented very readily without the assistance of yeast. Professor Thomson of Glasgow on the Urine.—*Annals of Medicine.*

FOREIGN MEDICINE.

SALIVATION TREATED WITH IODINE.

By M. Klose.

Salivation had been produced in the cases of two children during their convalescence, by mercury which had been administered on account of inflammation of the brain. To remedy the salivation, iodine was employed; and, after its first two doses, the peculiar smell of the mouth disappeared, the flow of saliva diminished, the pains became alleviated, and the aspect of the ulcers in the mouth was improved. The children were five and seven years of age. The iodine was discontinued before any of its peculiar symptoms were produced. M. Klose thinks iodine of value in such cases; and, as the medicines with which we are at present acquainted appear to possess but little influence over mercurial salivation, when it is once established, a new remedy which promises fairly is worthy of all acceptation.—*British and Foreign Review.*

INTERMITTENT EPISTAXIS CURED WITH QUININE.

A strong man, aged 27, suffered on alternate days from very violent bleeding at the nose, which continued from four to six hours, and could neither be put a stop to, nor alleviated by the common styptics, nor by any of the other means which are usually employed in similar cases. Regarding the periodicity of the occurrence of the bleeding, the treatment was changed, and a large dose of quinine with diluted sulphuric acid, was administered. During the twenty-one days following, the bleeding recurred but twice, and was then readily stopped. The patient subsequently continued quite well.—*Med. Zeitung.*

FRENCH MEDICINE.

Dr. Mühry, an intelligent physician of Hanover, has recently published a comparative view of the state of medicine and surgery in France, England, and Germany, deduced from actual survey.

The subjoined extract from his work in the 6th number of the British and Foreign Medical Review,* might be cited to prove the opening soliloquy of Monsieur Argan in Molière's inimitable play, —the "Malade Imaginaire", to contain a tolerably fair epitome of French therapeutics at the present day.

"Therapeutics, the end and aim all medical investigation, does not obtain that attention it justly demands in France. How very few internal remedies are permitted according to the dogmas of Broussais, is well known. It is long since the English physicians told their French *confrères* that they allowed their patients to die, while the latter imputed to the former, that they killed theirs. When one hears the prescriptions ordered in the sick-wards of a Parisian hospital he is struck with astonishment at the meagre diet and scanty medicine allotted so each individual.—*Un quart d'une portion, un pain, un bouillon, décoction de riz, sirop de gomme,* constitute at once the nourishment of the patient and the *excipient* for his medicine."—"The supply of victuals is so inconsiderable, that many invalids, especially those suffering from chronic ailments, are heard piteously imploring the physician, while settling their diet-table for the day, to grant them a greater portion of small additional loaf of bread. Indeed they may well complain of pain at the stomach; hunger is the cause of it. The numberless potions forced upon them induce by and bye squeamishness; food is loathed and rejected; and when a cure is accomplished, it is rather through starvation, or withholding aliment. than the employment of medicaments. *Lavemens* of various sorts are on the other hand, in great repute; such as *lavemens purgatifs, lexatifs, astringents, calmants, camphérés de belladonne, oxymellés, &c.* Every French practitioner is at any rate so far imbued with *Broussaism* as to imagine the alimentary canal always more or less affected in disease, and hence bound to abstain from the more efficacious internal remedies. Should neutral salts, calomel, opium, or antimonials be exhibited, it is

* Page 449.

merely for the sake of temporary trial; they soon give place to other things." The practitioner strives rather to procure a victory over the disease than the recovery of the patient; disregarding the general habit of the body for a *localization*, with avidity will he abstract some *palettes* of blood from a subject extenuated by fasting and disease; stifling instead of cherishing the few remaining embers of life. It is thus manifest that if French medicine be pre-eminent in diagnosis based on anatomic-pathelogical research, it is very far behind in therapeutics."

COPAIBA IN CATARRH OF THE BLADDER.

Dr. Devergie has recorded in the Gazette Medicale eight cases of chronic catarrh of the bladder, some of long standing, which were cured by injecting balsam of copaiba, into the bladder. When stricture of the urethra exists, it requires to be remedied before the injections are employed. A drachm of balsam of copaiba, to an ounce of barley-water is strong enough to begin with: when the balsam is combined with narcotics it is less exciting.

Many persons object to the use of copaiba on account of its nauseating property, but this may be corrected in combination.

Frank's Solution of Copaiba possesses the advantage of being free from the nauseating taste of the medicine, and is, therefore, now very much employed in preference to the other preparations of this remedy.

REPORTS OF THE MEETINGS OF MEDICAL SOCIETIES.

Sir,—As one of your early contributors, I cannot help availing myself of this opportunity to express the satisfaction which I, along with many others of your readers in this place, have lately derived from your having given up the practice of filling many of the pages of your journal with the long-winded prosing speechifications of a set of your London orators, who seem to squeeze themselves into every open door to hear the sweet echo of their own voices, and to refresh their visual organs once a week with the sight of their own names in the periodicals. Did any men of eminence, and men who had really useful information to communicate to their professional brethren, attend such meetings, *Reports* would then be of infinite value, more particularly to your provincial readers; but when I turn over the pages of the *Lancet*, *Gazette*, as well as those of your journal, for some years past, I find nothing but the same loquacious and obtrusive individuals coming forward, not only to speak at every meeting, but at every society in the metropolis.

Your sincere well wisher,

Liverpool, SCRUTATOR.
April 15, 1837.

[We certainly have refrained from giving verbatim reports of these *learned bodies*, though we shall not fail in communicating any thing of interest, which is not likely to occur very frequently. Eds.]

RHINOPLASTY.

A Latin poet, called Calentio, a native of the kingdom of Naples, who lived about the year 1480, writes in the following manner to his friend Orpian:—

"My dear Orpian, if you wish for a nose, come hither as soon as you can, and you will see a thing which is extremely surprising.

"There is one Branca, a Sicilian, who has found out the secret of making noses with the flesh he cuts out of people's arms, or with the noses of slaves who are willing to dispose of them. As soon as I came to the knowledge of what I here tell you, I could not help writing to you immediately about it, for it is the most important news I could acquaint you with. If you will come, you shall have a nose as large as you please. Make haste then, and fly to us.

CASES OF OVARIAN DISEASES.

REPORTED BY MR. EDEN.

CASE 1.

Elizabeth J——: Mary's Ward, No. 20: admitted Nov. 1831, under the care of Dr. Ashwell: aged 35: unmarrried: subject to irregular catamenia for three years, recurring every fortnight, lasting a week, and accompanied by clots: ill 16 months.

On admission—ovarian dropsy: great pain in left iliac region, at commencement: tumour extends from pubis to ensiform cartilage, and into both iliac fossæ: fluctuation distinct: os cervix and body of uterus, healthy.

Treatment—Nov. 2: Julep. Pot. Ni-

trat. Ol. Ric. ℥ss. p. r. n.—Dec. 18: Elaterii Ext. gr. ss. t. d. sing. dos. mist.

Progress—Nov. 8: abdomen fuller: parietes not thin enough to tap.—29th: Paracentesis: ten quarts of dark green slimy coagulable fluid.—Dec. 6: left her bed, and doing well—13th: bandage applied.—18th: confined bowels.

Presented. Cyst slowly filling: to go into the country.

Dr. Ashwell saw the patient again about eighteen months afterwards; and the cyst, although tolerably full, was stationary, and had been so many months.

CASE 2.

Mary K——: Mary's Ward, No. 12: admitted Aug. 30, 1832: re-admitted March, 7, 1834: aged 25: married: emaciated, of dark complexion: miscarried four years ago: ill 18 months: was first attacked with pain in right ovary; since which, a gradual and universal enlargement.

At present, distinct fluctuation: cyst very thick at right inferior part: menses regular.

Treatment—Sept. 10: Paracentesis.—20th, ditto. Purgatives, diuretics, occasional opiates, and iodine.—Mar. 7, 1834: again tapped.

Progress—15 pints of fluid evacuated.—Sept. 25: again filling.—20th: 9 pints of fluid withdrawn, not coagulable by head.—Oct. 30: going on well: cyst refilling slowly: urine abundant: great constipation throughout.—Dec. 6: Catamenia appeared after 14 weeks' cessation.—March 7, 1834: 9 pints of fluid withdrawn from one cyst only.

Presented Dec. 1832: again presented March 1834.

In April 1836, Dr. Ashwell saw this woman; and found the cyst only partially full, not requiring paracentesis.

CASE 3.

Jane B——: Mary's Ward, No. 19: admitted Sept. 28, 1832: aged 67: married; no children: very thin: swelling in both iliac regions for four years. One year and a half ago, remained in this ward 12 weeks; and after a long use of the iodine, she diminished nearly to her natural size, from having the appearance of being in the last month of pregnancy. Has since attended as out-patient.

On admission—abdomen painful, and greatly distended with very firm, fluctuating, ovarian cyst: abundant urine. For two years after the solid enlargement of the ovary commenced, there was no dropsical effusion: the fluctuation has only been evident during the last 24 months.

Treatment—Julep. Iodinii cum Tinct. ejusdem, et Pot. Hydriod. Casc. cum Sod.

Progress—Urine abundant throughout; the abdomen much diminished in size; giddiness in the head, &c., from iodine.

Since this period, the iodine has been more or less constantly administered; and the fluid in the cysts has been restrained from any great accumulation. The solid growth on the right side of the lower part of the abdomen is stationary, although still of great size.

CASE 4.

Caroline D——: Mary's Ward, No. 18: admitted Sept. 6, 1834, under the care of Dr. Ashwell: aged 27: fair: always healthy: married 10 years: 3 natural labours: regular but difficult menstruation: leucorrhœa: hæmoptysis, from straining 4 years ago, followed by swelling in right iliac region 12 months after last labour: swelling rapidly increased for 8 months; then remained stationary till present time: ill 4 years.

On admission—abdomen considerably distended; fluctuation distinct; pain in loins, hips, and left side, on deep inspiration; scanty urine; costive bowels. 10th: abdomen painful: now menstruating.

Treatment—M.M. cum M.S.—25th: paracentesis.—26th: Tinct. Opii m. xxv.—28th: Cal. cum Opio et Liq. Opii sed.

Progress—Sept. 17th: distended to the utmost.—25th: only a few ounces of fluid withdrawn, from the compound nature of cysts. Vespere: an immense quantity of fluid escaped from the wound.—26th: better: abdomen distended with air.—28th: sudden rigors; tightness at scrob. cord.; vomiting of glairy fluid; burning sensation at umbilicus; collapse; cold surface; blue extremities; cold sweats; little diarrhœa; but much abdominal tenderness.—9 P.M.: trocar wound gaping and inflamed: pulse like a thread: sinking.

Sept. 29th: death. No examination could be obtained.

CASE 5.

Mary M——: Mary's Ward, No. 12: admitted Feb. 28th, 1835, under the care of Dr. Ashwell: aged 57: widow: one child 3 years since: catamenia ceased 10 years ago: sallow; dark hair and eyes: had good health till within the last year; occasional leucorrhœa; severe pain in loins and flooding 6 months since (as

much as a quart), which recurred every 3 or 4 weeks: constant draining in the intervals: ill 6 months.

On admission—a large tumour in the left side of the abdomen, extending as high as the ribs: it seems to be divided; the lower part being very, and smaller than the upper, which is more extensive, and very moveable: flooding: difficult micturition; costive bowels; os and cervix uteri healthy.

Treatment—Stimulants, opiates, purgatives, enemata: Croton oil. Infus. Secal. C. o. i. Zinc. Sulph. et Alum. āā ʒi. pro injec.

Progress—Remarkable for the following circumstances: — flooding; leucorrhœa; tumour pressing on the rectum; occasional scybalous discharges, at which time the vomiting was alleviated; incontinence of urine; great pain in the growth; vomiting of apparently fecal matter. There can be little doubt that this was one of those malignant growths of the ovary so well described by Dr. Seymour. The fluctuation was not sufficiently distinct and extensive to allow of the opinion that it was produced by regular dropsical effusion into a schirrous and indolent ovary. The rapidity of the progress, and the extreme suffering, confirm its malignancy.

No examination could be obtained. *Guy's Hospital Reports.*

LITERARY INTELLIGENCE.

Dr. Castle's Translation of the Pharmacopæia Londininsis, with Descriptive and Explanatory Notes on the Materia Medica, &c. is nearly ready for publication.

Paramorphia.—A new substance, extracted from opium by Pelletier. It is obtained by adding lime-water to an aqueous solution of opium, washing the precipitate, drying it, and then dissolving it by boiling alcohol. Nearly all the morphia will remain in the waters with which the precipitate was washed. On evaporating the alcohol, a brown, granular mass will be obtained, which is next to be acted on by ether. This solvent will remove the paramorphia, leaving behind a black, extractive matter. The new principle can be procured from its etherial solution by evaporation, and then the processes of re-solution and crystallization can be had recourse to, with the view of further purifying it.

Argilla Depurata.—M. Duerr has employed the argilla depurata (purified alumen), with considerable advantage in the treatment of the dysentery and cholera of children. It may be given without fear in the early stage, when the inflammatory symptoms forbid the use of chalybeate remedies. In order that it may exert a beneficial influence, it must be administered in large doses, from half a drachm to a drachm in the twenty-four hours.—*Hufeland, und E. Osan, Journal des pratischen Heilkunde.*

Gum Acaroides.—Dr. de Kay states, that a resin which exudes spontaneously and copiously from the *acarois resinifera* is freely used. The tree grows in the neighbourhood of Botany Bay. The resin is known in commerce by the name of Botany Bay Resin, or Yellow Gum. It is considered to be an agreeable tonic, and is, by the natives of New South Wales, looked upon as a specific in dysentry. It has also proved of advantage in dyspepsia, hysteria, cholera, diarrhæ, and colica pictonum; its exhibition is contra-indicated, when there are symptoms of inflammation present. It is most generally given in the form of tincture.—*N. Y. Medical and Physical Journal.*

Dr. Sigmond has been elected an Honorary Fellow of the Medical Society of Stockholm, as a tribute of respect for his improvements of the Materia Medica, in the room of the late, celebrated, Professor Geiger of Heidelberg.

M. Des Granges recommends the application of mercurial ointment as an efficacious remedy against chilblains, and the incipient stage of lachrymal tumour. The following is his formula:

℞ Cerati ʒj
Ung. Hydrarg. ʒj. M.
ft. Ung. *Révue Médicale Française, Mars* 1837.

Medical Evidence.—During an assault case, the Counsel told the Jury that Medical men were occasionally obliged to use techincal expressions in giving evidence, when he was interrupted by Baron Gurney, who said, "except eminent men, who always use the plainest language."

All communications and works for review to be forwarded, (carriage paid) to Dr. Ryan, 4, Charlotte-street, Bloomsbury-square.

FRANCIS A. COUNTWAY LIBRARY OF MEDICINE

THE

London Medical and Surgical Journal.

No. VII. SATURDAY MAY 20. Vol. I.—(1837.)

NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXIII.

GENERAL OBSERVATIONS.

Utility of Physiology to the Medical Man and Mankind in General — Miserable State of Medicine destitute of Theory—Absurd Fancies of Former Ages—Revolting Remedies of Savage Countries—Former degraded State of Medicine—Grimaces of Mesmer—Metallic Tractors of Perkins—Fanatical Intercessions of Hohenloe—Mystic Bottles of St. John Long—Treatment of Epilepsy by Spitting—The Human Heart eaten as a Remedy—Powder of the Skulls of Suicides—Potations of Urine, Semen, the Menstrual Fluid, and the Blood of Gladiators—Dung, Testicles, Penes, and the Scurf from Horses' Legs eaten as Remedies—Dried Weazles swallowed—Stercoraceous Cure for Diseases in Tartary—Contrivances to frighten away Evil Spirits—Savage Customs at Labrador—Drawing Teeth and Amputating Fingers in the Sandwich and Friendly Islands—Deficiency of Medical Students in Physiology—Disinclination to its Study—Disasterous Effect on their Subsequent Authorship—Hollow and Absurd Physiological Theories—Observations on Dr. Mason Good's "Study of Medicine"—Necessity of Clear and Consistent Ideas and precise Language in Medical Authors—Best Means of Studying Physiology—Use and Abuse of Experiments on Living Animals—Precept of Abernethy—Advantage of Studying Physiology on our own Persons—Analytic and Synthetical Methods—Difference between a Physiologist and a Canicide—Best Subject for Analysis—General Contempt for the Literature of Physiology—Inconsistent Conduct of Declaimers against it—Contributions to the Advancement of Science—Discoveries of Modern Philosophers—Rapid Progress of Knowledge—False Charge of Irreligion brought against Physiology—Atheism and Deism really result from Ignorance—Absurdity of the contrary Doctrine — Plato on God's Epistle to Mankind—Testimonies of Cicero, Seneca, Pliny, Galen, and Paley.

So much, then, for the arguments commonly adduced against cultivating the study of the Theory of Medicine, as being useless, either to the medical man or to the man of the world. But an additional and very forcible argument on the opposite side may be collected from a consideration of what would necessarily become the condition of Medicine, if theory were abandoned, or, in other words, of what has always been its condition in those countries in which theory has either never had a beginning, or has afterwards, from political degradation, been neglected, and of what is still its condition with those persons among us who, either from weakness of intellect or defect of education, from infancy or from old age, are incapable of theorising. It is idle to say, "We will not look at causes; we will regard effects alone." The human mind, "that mind of man, that godlike spring of action," must be continually employed in some way or other. The most abject savage, the gibbering idiot, the untutored clown, the puling infant, the decrepit dotard; all must have their minds, such as they are, in some degree engaged; and what they want in reason, they invariably make up in credulity and superstition. In as far then as we desert theory in medicine, it is reasonable to believe we shall become deluded by hallucinations, incomparably worse than the worst into which theory can lead us. It is needless, in support of this position, to go into all the absurd fancies which the

people of former ages, or the savages of modern times, have entertained, and do still entertain, with respect to the causes of diseases, or the idle measures to which they have resorted, and do still resort, in the treatment of them. From this degraded state, the practice of medicine has only very gradually recovered itself in European countries; and recovered it may be said to be, in spite of the grimaces of the Mesmers; the metallic tractors of the Perkinses, the fanatical intercessions of the Hohenloes, and the mystic bottles of the St. John Longs, of which one is still condemned occasionally to hear. But among the barbarous and semi-barbarous people, whom theory has not yet enlightened, the opinions still prevalent respecting the causes of diseases, are as wild as ever; and the practices still had recourse to in cases of sickness, are equally idle and absurd, not to say cruel and revolting. We learn from one of Plautus's plays, that it was the custom in the ruder days of ancient times, for all the bystanders to spit upon a person affected with epilepsy, as a means of restoring him; whence one of the numerous names of that disease was the *morbus in sputandus*. The following are some of the other remedies sometimes resorted to in these cases by the ancient empirical physicians. They made the wretched patient regale himself on slices of the human heart, or on the powder of the skulls of suicides, washed down with potations of dung, urine, semen, menstrual fluid, or hot blood from the wounds of slaughtered gladiators, or on the testicles and penes of various animals, the scurf from horses' legs, or dried weazles devoured whole, together with numerous other delicacies which exceed in horror "the grease that's sweaten from the murderer's gibbet," or any other execrable ingredient of Macbeth's cauldron. These are worse, ten thousand times worse than the worst enormities to which errors in theory ever gave rise; and many of these, and others as bad and worse than these, are still habitually resorted to by the savages of modern times. Thus the Plautian remedy for epilepsy, is still in full vigour among the tribes of Columbia river, and other barbarous hordes, in a great variety of diseases; and the dried dung of the Grand Lama is still the chief remedy for all diseases with some of the inhabitants of Tartary, who not only wear it in little boxes hung round their necks, but absolutely eat it, mixed with their food and drink. In order to frighten away evil spirits, or for some other purpose equally sagacious, it is a prevalent practice with many savage nations to whistle and sing, and roar by the side of the sick, and sometimes to rattle stones in shells, to ring bells, strike symbols, or blow trumpets in their ears. What, in the great majority of diseases, must be the result of such a practice may be easily imagined. But the custom at Labrador of thumping the head on the floor to music, in order to cure the headache, and in the Sandwich and Friendly Islands, of drawing a tooth, or cutting off a finger, as a remedy for diseases in general, are still more singular and shocking. So prevalent are the customs last mentioned that, according to Captain Cook, scarcely an individual is to be found in those islands, with his proper complement of teeth and fingers. Among all the evils which have been so thoughtlessly said to result from theory in medicine, enormities like these cannot faily be laid to its charge.

I have been thus particular in endeavouring to refute the charge of inutility, if not of an absolutely mischievous tendency, so recklessly laid upon the study of physiology, because I conceive it is to the prejudices thus inconsiderably excited against it, that we must ascribe the comparative lukewarmness with which this branch of medical study is commonly entered upon by students of medicine, and the comparatively inconsiderable progress which they generally make in it. From a prolonged an intimate acquaintance with the more advanced students of medicine in this University, I feel justified in asserting that in no branch of their profession are they generally more deficient than in this, which can only arise, I imagine, from the false views commonly entertained of the scope and tendency of this science; for the science itself is certainly not less interesting than those in which proficiency is much more common; nor are the teachers of it in general less talented or attractive than those who profess the other branches of medical education. Whatever may be the cause of it, however, this imperfect attention paid by students in general to the study of physiology, during the period of their studies, has consequences the most distressing when they subsequently turn authors, as most of them now do turn. It is to this cause we must attribute the host of hollow and absurd theories which, notwithstanding the advance which this science is unquestion-

ably making, one is still frequently condemned to hear handed about by medical men, if not trusted to and acted upon. Many of these are particulary examined in the Lectures; but I cannot avoid alluding here, in proof of my assertion, to those advanced in the ponderous and pompous tomes, recently published by a learned Nosologist, whose pretensions are such as to render his errors and deficiencies less pardonable, and at the same time more pernicious than those of others. Of this work almost every page is defaced under the misnomer of theories, with strings of "words, words, words," heedlessly looped together, always without any general bearing, frequently without any meaning at all, and sometimes, when any meaning can be detected, in direct opposition to each other. The mere fact that this work has attained, I will not say popularity, but toleration among us, is abundant evidence that the theory of medicine is not, even at this advanced period, generally cultivated with that attention, nor its doctrines generally delivered with that precision which they deserve, and it is obvious that as the want of mature study of the subject seems to result from the degree of distrust which students frequently entertain of theory in medicine, so the want of clear and consistent ideas and precise language, when they become authors, must have the effect of perpetuating this distrust, and thus of materially obstructing, if not of entirely stopping up, every avenue to improvement.

Having thus attempted to demonstrate that the study of physiology, imperfect as it is, has already done much for the profession, both as an art and a science, that its imperfect state is an argument for rather than against the study of it; that we may reasonably expect that a proficiency in it, will become every day more and more essential to the success of a medical man; and that such a proficiency is to be obtained, not by the desultory and isolated contemplation of a few phenomena, as they now and then present themselves, and as we now and then find ourselves in the humour to descant upon their causes; but by a continued plan of study, to be steadily prosecuted through all the principal phenomena of health and disease; it remains for me only to mention what plan I consider best adapted to the end in view; in other words, what plan I adopt in these lectures. Previously to doing this, however, I shall subjoin a few general hints on the best means of privately prosecuting these studies and on the disposition of mind with which they should be uniformly conducted.

Far be it from me to discourage the method of studying physiology and pathology by experiments. I am abundantly well aware how much this plan of interrogating nature has done, in modern times, for every branch of physieal science; but I am equally well aware, that these advantages have been in general overrated; at any rate that student who pursues that plan begin at the wrong end, being engaged in experimenting on animals, in hopes of finding out something or other on which to found some new and surprising doctrine, while they take no manner of notice of the great number of things continually going on in their own bodies, of the rationale of which they are as ignorant as the child unborn. It was a precept which I learned from my first teacher in medicine, the venerable Abernethey, never to forget that I always carried about with me the best subject for observation and experiment; one the most easy to be consulted, since it was quite in my power; and one, the phenemena of which should be the most interesting to me, since it was with similar beings alone that I should in future have any immediate concern. This precept I have never lost sight of; and I beg now most earnestly to recommend it to my hearers. If from time of rising to that of betaking ourselves to rest, we accustomed ourselves (during both health and sickness) to endeavour rationally to explain every thing which took place in our bodies, and to assign a consistent cause for every motion and sensation within us, we should have comparatively little to learn, I apprehend, from experiments on dumb animals; and should be secured, in a great measure, from being deceived by those hollow explanations which are sometimes offered of the phenomena in question. Let those, then, who are so prone to indulge in the prevailing cant of the great superiority of the analytical system of science (as cultivated by the moderns) over the synthetical system (as adopted by the ancients) continually keep in mind, that a physiologist and a canicide are not synonymous terms; that the best subject for analysis is themselves, and the most useful contemplation is that which relates to the most common processes; and that till they understand all which can be readily understood, with a little reflection, about

themselves, and know the rationalia of all familiar phenomena, it is preposterous to pore over the penetralia of other animals, in search of things which are recondite, and comparatively useless.

Another thing likewise to be done, in order that the young medical theorist may not betake himself, as many do, to motiveless and tiresome experimenting, is to study with attention, not only the notions at present generally entertained of the several subjects of his investigations, but also those which have been held respecting them at any previous time, although they may since have been abandoned. This, I know, is considered by many to be a very superfluous labour, one of the best physiologists of the present day being unfortunately a good deal addicted to decrying any study, in prosecuting this science, except that of the animal body; and there is consequently a remarkable tendency to the adumque observable in the noses of most people as often as the literature of medical theory is mentioned; for most people think only as their pastors and masters direct them. It is, however, a little inconsistent with the professed principles of the said declaimers against medical literature, that they are still incessantly writing themselves; since, if people universally followed their advice, *their* books as well as those of their predecessors would be entirely useless. Fortunately, however, for them and for us, people in general are not quite so senseless. Before they can experiment with advantage themselves, they feel, or ought to feel, that they must know what previous experimenters have done; and before they can draw satisfactory conclusions from their experiments, they feel, or ought to feel, that they must know what conclusions have been drawn before; and for what reason these conclusions are either still countenanced, or have been abandoned.

Furnished, in this way, with all the light which can be obtained by continued reflection on every-day occurrences, and by diligent study of the opinions successively entertained on every point connected with the subject, the student of physiology will proceed to consult nature experimentally with some prospect of advantage, since his experiments will be instituted with some definite design; and his conclusions from them will be tempered and corrected by a knowledge of the past and present state of science, not only with regard to the subject immediately in hand, but also to that of all others directly or indirectly connected with it. If so furnished, moreover, he will not give himself more credit for what he may perhaps contribute to the advancement of science than he deserves. For the most part, the discoveries of modern philosophers are to be attributed, not so much to themselves, as to the age in which they live. So many are the heads and hands at present employed in advancing science, and so rapid are the strides which it is now every where making, that what one man does not hit upon to-day, another is almost sure to hit upon to-morrow. The most important discoveries are, as it were, forced upon the discoverers of them; and in making them, we only add perhaps an inconsiderable link to a long chain already all but perfect, and which any body else might have added as well as we. The general diffusion of science is as unfavourable to vast reputations, as the general diffusion of morality is to vast virtues, or the general diffusion of wealth to vast fortunes. Where all are well informed, no one can (to any surprising extent) surpass his neighbours; and it is only in ages of general darkness that we meet with an Aristotle, as it is only in ages of general vice and debauchery that we meet with a Cato, and of general want and wretchedness with a Lucullus.

But precipitancy, ignorance, and self-conceit are not the worst faults from which perhaps the students of the theory of medicine require to be defended. The study is said also sometimes to give rise to irreligion. That ignorance should occasionally make men atheists or deists, is sufficiently intelligible; but how the continued study of the sublimest of God's works should ever have led, either to atheism, or to a disbelief in revelation, I can no more conceive, than how the contemplation of a beautiful and intricate piece of mechanism should lead either to a denial of the existence of the mechanic, or to a disbelief in his account of the purposes and destinations of his contrivance. It was remarked by the sublime Plato,—"The world is God's epistle to mankind;" and it is sufficiently well known that Cicero, in his work "De Naturâ Deorum," when he wishes to prove the existence of a Supreme Cause, dwells more upon the fabric and functions of the human body than on any thing else. Seneca and Pliny were almost as much preachers as philosophers. Galen's work, "De Usu Partinum," may be regarded almost as a prose hymn to the Creator of the universe; and the excel-

lent Paley (to omit numerous other authors) in his "Natural Theology," draws his strongest proofs of the existence, the wisdom, and the goodness of God from the facts afforded by physiology. It is perhaps out of my province to dwell more particularly on this subject, but I cannot avoid cautioning students, and young students in particular, to receive with the utmost reserve all those flippant and irreverent remarks, sometimes unhappily met with in physiological works, the tendency of which is to shake their faith in truths which it must distress them to doubt, and wither them to disbelieve. A want of religion is not a mark of profound philosophy; for the greatest philosophers have bowed before that Being, in whose sight their utmost wisdom is foolishness. Nor is it a mark of extensive erudition; for the most eminent scholars have left behind them imperishable monuments of their devotion:—nor of superior spirit; for the greatest heroes have been as renowned for religion as for courage:—nor of high fashion; for persons of the most exalted rank have been no less conspicuous most unaffected piety. But it is a mark,—and, as far as my experience goes, a never-failing one,—of a half-witted and half-educated, dastardly, and vulgar reptile; not a daring hero (as he perhaps tries to persuade himself), since his wretchedly contracted views of things render him unconscious of what he braves; and the furthest possible from a well-bred gentleman; since good manners would have taught him to treat with deference even the errors of the great and good, of all ages and of all nations.

AN ADDRESS

DELIVERED TO THE MEMBERS OF THE

WORCESTERSHIRE NATURAL HISTORY SOCIETY,

ON THE OPENING OF THE

WORCESTERSHIRE MUSEUM,

SEPTEMBER 15, 1836.

BY CHARLES HASTINGS, M.D. F.G.S.

It has certainly on many occasions, in the course of my life, fallen to my lot to be placed in situations of responsibility, in which I have felt doubtful of my power to do justice to the task I had undertaken; but at no former time that I can call to mind has this impression been so strong as at the present moment.

The occasion on which we meet is so novel, so important, and so striking, that it is calculated to call forth sentiments more exalted than I can hope to express, and, therefore, this responsible duty ought to have been entrusted to some veteran labourer in the field of knowledge, who might have elevated your minds to higher and nobler aspirations than I can hope to produce in them. The dedication of this temple to science—this splendid edifice, which will be a monument to future ages of the zealous desire of the present generation to advance the progress of useful knowledge—should have been undertaken by some votary more capable of making a suitable offering on its alter. But I need not detain you to relate the circumstances which led to the disappointment of the expectation I had entertained, that this address would have eminated from one whose habits and pursuits render him more equal to the task than myself.

I shall, therefore, at once proceed to the discharge of my allotted duty; and in order to place more clearly before you what has suggested itself to me, I will arrange my observations under the three following heads:—

1st. I will endeavour to show the good results that are likely to ensue from well-regulated societies formed for the cultivation of knowledge, and more especially from the establishment of the Worcestershire Natural History Society.

2d. I will make some remarks on the advantages and pleasures of Natural History; and

3d. I will succinctly trace the progress of natural History from its earliest rude and barren state to its present advanced and promissing condition, by shortly laying before you some accounts of the labours of its most successful cultivators.

The claims of societies of this kind generally to public support are so well explained in a paragraph quoted in the Report of your Council last year, that I am induced to repeat it on this occasion. In speaking of an isolated cultivator of science, it is observed, "He may, indeed, gather recreation and delight in limiting his contemplations to the simple objects which a rural walk affords to him. He may be content to admire a few detached ornaments of the temple, without de-

siring to understand the extent and harmonious construction of the building itself. But if he desire to quit this humble path of inquiry for another more elevated, if he wish to generalise his ideas and compare his observations with those of others,—he is no longer, as in the former case, dependent on his own resources; he must associate with those of similar pursuits and studies with himself; he must learn to distinguish that which is known from that which is unknown, and this can only be done by a reciprocal communication of knowledge. Hence the origin of all societies. The value of such associations is greater than at first sight it appears to be; for besides those advantages just mentioned there is another, without which the most gifted minds would probably remain inert and inactive. Intercourse with congenial spirits excites that noble and generous emulation which has been the impelling principle of some of the greatest of men, and it will ever prompt them to the exertion of energies never before called into action. Many, therefore, of the best interests of science are involved in the construction of these societies; they exercise in various ways an important influence upon the advancement of human knowledge, and they consequently demand the serious consideration of those who feel interested in its extension." There is also in the peculiar circumstances of England an additional motive for the formation of societies for the advancement of the study of nature. There is no civilized country in Europe of which the government has shown so great an indifference with respect to the progress of science as that of Great Britain. Even in far less civilized and enlightened ages than the present, patronage was extended to science by the sovereigns of Europe; but it is a fact much to be regretted, that in this country, where, owing to our commercial and maratime affairs being on so extensive and vast a scale, its cultivation is of more importance than in any other European state, our Government has been supine on this subject, and little national encouragement has been given to those who have made important discoveries in it. Of all the counties of Europe, France is undoubtedly the one in which the scientific establishments have been conducted on the most enlightened and liberal principles, and in which science is most successfully cultivated. This high distinction she owes to the formation of the Institute at the close of the last century, and to which upwards of £100,000 is annually paid by the French Government. Owing to this circumstance many members of the Institute are in opulent circumstances, and can, without anxiety and in calm seclusion, pursue their scientific inquiries; or, if they desire to be distinguished in public life, all the honours of the State are open to philosophers and literary characters. The sage and the hero deliberate in the same cabinet; they are associated among the privy councellors of the king; they sit together in her house of peers and in her chamber of deputies; they bear the same titles, they are decorated with the same orders; and the arm and the mind of the nation are thus indissolubly united for its glory and for its defence. This supineness of the Government of England makes it the more important that means should be adopted by which the patronage and support of the wealthy, the intelligent, and the enlightened community constituting this great country should be as much as possible extended to the advancement of knowledge; so that the genius and perseverance of Englishmen in the investigation of truth may be crowned with success, even without those extraneous aids afforded in other countries.

There is nothing that would tend more to bring about this desirable result than a general organization of scientific societies throughout the kingdom, which would have the effect of making the study of Nature more prevalent among the educated classes of society, and every where men of wealth and title might then be found to be active cultivators of popular and practical science. "I have often wondered," says Sir Humphrey Davy, in his 'Consolations in Travel,' "that men of fortune and of rank do not apply themselves more to philosophical pursuits; they offer a delightful and enviable road to distinction, one founded upon the benefits and blessings conferred upon our fellow-creatures; they do not supply the same sources of temporary popularity as successes in the senate or at the bar, but the glory resulting from them is permanent, and independent of vulgar taste or caprice. In looking back to the history of the last five reigns in England we find Boyles, Cavendishes, and Howards, who rendered these great names more illustrious by scientific honours; but we may in vain search the aristocracy now for philosophers, and there are few

persons who pursue science with true dignity; it is followed more as connected with objects of profit than those of fame, and there are fifty persons who take out patents for supposed inventions, for one who makes a real discovery."

Such were the sentiments of this distinguished English philosopher, as expressed only a few years since; and the decline of science in England was made the subject of a powerful and eloquent appeal to the public by Mr. Babbage shortly afterwards. Since that time a great national society has been formed,—The British Association for the Advancement of Science,—in imitation of similar institutions on the continent, and not only has it been instrumental in congregating together, every year since 1832, all the celebrated naturalists and philosophers of this country, but also several hundred persons of rank and talent have assembled on these occasions to testify their love for science, and their desire that it should be zealously prosecuted in this country.

The splendour of the late meeting at Bristol has greatly added to the general interest taken in this great national association, and has strengthened the conviction of reflecting men, that it is eminently calculated to diffuse a general taste for knowledge, and to assist in its advancement. There is another and a very important advantage that arises from societies of this nature. The congregating together of men of various classes and opinions, all desirous to promote the common interest, cements a friendly intercourse at once beautiful and useful. Asperities are rubbed off; a valuable example of union and social kindness is set; strangers see men of high influence and station, whom they know to be strongly opposed in other relations of life, acting together with amenity for a general benefit, and this example is not lost upon the community at large. It was well said by the noble chairman of the British Association, the Marquis of Northampton, "I trust that Bristol will follow the example of other places which this Association has visited, and that for this week at least, all sectarian feelings will die away, and the hideous forms of political and religious animosity will be banished, for it is not by hating our fellow-men that we show either our patriotism or our religion." In furtherance of the design of bringing about a general voluntary combination of the educated classes in this country for scientific purposes, nothing seems more happy than the suggestion for the formation of County Natural History Societies, whose members shall be eng ged in investigating all the facts presented by Nature in their several districts, and in collecting together in museums those curiosities which might otherwise continue to be unnoticed. For this suggestion the world is indebted to Dr. Conolly, and I am proud to add, that the county of Worcestershire has taken the lead in adopting it. It is now three years since the Worcestershire Natural History Society was instituted, and it has received during that period most encouraging support from all classes of the inhabitants. In order to secure the particular investigation of the several branches of the natural history of the county, it was determined at the commencement of the undertaking to divide the Society into sections; and in furtherance of these views, committees have been appointed each year on Statistics, Zoology, Botany, Geology, Mineralogy, and Meteorogoly. The labours of these committees have been very useful in collecting together valuable information, which otherwise would not have been brought forward. The accession of new facts must, indeed, mainly depend upon the zeal and energy with which these sections exert themselves for the advancement of the objects for which they are appointed; and on the statistical committee in particular a heavy weight of responsibility rests, as upon its members will devolve the duty of carrying into effect the recommendation contained in the report of the Council, delivered to the anniversary meeting of the Society held in 1835, relative to the publication of an improved history of Worcestershire, which should have an especial view to its natural history. The Council advised that, for the convenience of purchasers, and also that the labour of the undertaking might not at once prove too onorous, the work should come out in parts. The consideration of this proposition has engaged the attention of the statistical committee during the past year, and it is truly satisfactory to find that, under their superintendence, the contemplated publication, which, if properly conducted, will doubtless prove of great value, will shortly be commenced, as two of the members of that committee have already been requested to draw up a full account of the statistical and general history of the parish of Great Whitley, and the task is so far completed, that it now only waits the necessary time for passing

through the press to be submitted to the public.

There is every reason to believe that the able manner in which the local history of that parish has been executed, will secure for it an extensive circulation throughout this intelligent county; in which event the Society will be justified in proceeding in their praiseworthy undertaking, and will gradually collect together a correct history of each parish in the county, so as to present an invaluable body of information, which may prove of the utmost importance to the traveller, the antiquary, the man of science, and the naturalist. The committee invite the ministers of religion, magistrates, gentlemen residing on their estates, in short all persons to assist them in collecting local information for this object; as there are few, if any persons in existence, so devoid of observation and curiosity, as to be incapable of communicating some knowledge of the productions of the situations in which they are placed.

The different sections, then, of the Society to which I have just adverted, are assiduously employed in endeavouring to advance our knowledge of the productions of the county; but we must remember that diffusion and advancement are two processes different in their nature, and each may exist without the other. It was found therefore very desirable that means should be taken by this Society, not only to advance the knowledge of the natural history of Worcestershire by the labours of those who were already initiated into science, but also to diffuse a taste for this study throughout all classes of the community. For this purpose lectures have been instituted and three courses of them delivered. They have been principally confined to natural history, and the effect has been that crowded audiences have been attracted to the lecture-room, and it may fairly be presumed that the talent and eloquence of those who have drawn together so many of the enlightened, wealthy, and influential inhabitants of this city and neighbourhood have had the effect of increasing the estimation in which these pursuits are held by the public, and of diffusing more generally a knowledge of them among the mass of our countrymen.

But after all, whatever exertions may be made by this Society to diffuse a knowledge of natural science by lectures, it is manifest that without books to which the student can refer, the knowledge thus acquired will be comparatively superficial. It is a matter of regret that books of natural history do not so often find their way into our public libraries as might be wished, particularly the Transactions of the Linnæan and Geological Societies. It therefore became an object of great moment to establish a library in connexion with the Society, which should be principally devoted to natural history. The funds of our Society, it is to be regretted, have not hitherto been sufficient to enable us to purchase many of the valuable and interesting works on those subjects, which are now daily issuing from the press; but the liberality of our supporters has done much in this respect, and it is hoped that, ere long, some arrangement may be made, by which purchases may be annually effected; and these, combined with the donations, which may still be contributed by those who feel interested in the diffusion of the best kind of knowledge, will, before many years pass away, enable the Society to afford to its members reference to a valuable collection of books.

But no object which has engaged the attention of this Society is more important or more calculated to secure the patronage of an enlightened public than the formation of a museum, in which will be collected specimens of the productions of the county and illustrations of its antiquities, as well as curiosities from foreign countries. Indeed, the original proposer of societies of this nature enumerates among their other advantages that they would tend to concentrate in county museums a great part of the valuable collections already made by scientific individuals, or which would naturally be made in the course of the particular labours of several of the sections. The difficulty which individuals find in becoming even tolerably well acquainted with the geology, botany, and natural history of their own county will thus, in a great measure, be removed; its products and manufactures will become familiar to every eye; and its history and antiquities to every mind.

The progress that has already been made in this part af the labours of the Society, and which has rendered it necessary that the appropriate edifice in which we now meet should be erected to receive our collections, gives rise to the hopes that at no distant day our museum will fully realize the expectations so sanguinely expressed in the foregoing para-

graph. But it must be remembered that a continuance of zeal and energy will be required to prosecute this undertaking; and all those who can lend their aid to it, by devoting some part of their time to its prosecution, will be ranked among its most valued supporters. Moreover, as considerable funds will be required to carry on this desirable work, those wealthy individuals who have not leisure themselves, may render the labours of others more available by giving of their abundance to the benevolent design of increasing intellectual gratification, and of spreading useful knowledge throughout the different orders of the community. Thus all may assist in carrying forward this admirable work—all may be partakers of the credit that will arise from its successful prosecution. The votaries of science should persevere in their efforts to procure a more universal admission of the utility of such societies, for depend upon it, as this great country advances in all true knowledge, in future ages not the least interesting page of local histories will be that which bears the stamp of the upward tendency, which will ever mark the nineteenth century. Upon this effort, upon all these, as upon the efforts of the good to mitigate the evils to which, for reasons only imperfectly known to us, men are subjected in this world, but against which we are not left without resources, I cannot doubt that the great Ruler of all events looks with approbation. By Him to whom "the great globe itself" is exhibited but as a small part of a vast creation, no actions of benevolence pass unregarded, or unapproved, or unassisted.*

It is no doubt the conviction that it is the duty of all to assist in directing the stream of knowledge in the present day, which has induced some of our most learned divines to come forward and recommend by their eloquence the promotion of scientific societies. Amongst these I may mention the Rev. Professor Sedgwick, that most able and highly gifted individual, who now adorns the University of Cambridge, and that college in it which has to boast the names of the two greatest philosophers of any age or country—Bacon and Newton—and whose own name will hereafter be added to a list of worthies unexampled in the annals of science. He has lately been delivering a course of lectures to the Natural History Society at Norwich, and has, by the display of his great and varied qualities, conduced in a high degree to the intellectual and spiritual improvement of that city. He excited the admiration of all who heard him on that occasion by the depth of research shown in demonstrating the interior anatomy of the earth, by sportive wit, by copiousness of illustration, by clearness of description, and above all, by eloquent piety, which, surrounding as it were with a sacred halo the brow of philosophy, bids her at every advance on the path of discovery, trace with reverence and love the hand of an all-wise and beneficent Creator.

The venerable Archdeacon Butler too, now Bishop of Lichfield and Coventry, has been one of the most active supporters of the Shropshire Natural History Society, and in an eloquent and powerful address delivered by him before the members, which is well calculated to increase the high reputation he had previously acquired as a distinguished scholar, enforces upon them the obvious truth that it will never be found that real science is at variance with scriptural knowledge. It may help us to a better and clearer interpretation of those truths which are recorded in scripture, but never will it impugn the sacred oracles, or promote the cause of irreligion or infidelity. If it enlarges our views of this wonderful creation, if it enables us more clearly to understand the mechanism of the world we live in, and the admirable contrivances for the preservation of the creatures which inhabit it, and the unerring laws by which the worlds around us are moved and governed, and retained in their several orbits, or in their dependent systems, it can only lead us to contemplate with more reverential awe the inconceivable power and majesty of that Infinite and Almighty Being who called them into existence by his single fiat, "who spake the word and they were made, who commanded and it stood fast."

It is impossible to contemplate the efforts thus making, by these illustrious individuals, in support of institutions like our own, established for the improvement of mankind, without feeling the mind elevated with an extraordinary hope, and I might almost say a lively faith, in the success of those grand efforts which are now making for the advancement of sound knowledge.

2. In proceeding to the second division

* See Dr. Conolly's Lecture to the Mechanics' Institute at Leicester.

of my subject, in which I have proposed to bring before you a brief sketch of the advantages and pleasures of Natural History, I may in the first place remark that we happily live in an age when something like a just estimate is formed of the value of the study of nature. "Time was when in this country," (as is remarked by a writer in the Edinburgh Review,) "even enlightened men were to be found who regarded Natural History as an humble department of knowledge, destined for the exercise of the inferior orders of intellect. The mathematician and the natural philosopher assumed to themselves the highest locality in the temple of science, and almost expelled the collector and the classifier from its precincts. Presuming that magnitude and distance ennobled material objects, and invested with sublimity the laws by which they are governed, and taking it for granted that the imponderable and invisible agents of nature presented finer objects of research than the grosser elements which we can taste, and touch, and accumulate, they long looked down upon the humble and pious naturalist as but a degree superior to the functionary of a bear-garden or the master of ceremonies to a cage of tigers." In the pride of their hearts such men forgot that much of man's comfort and happiness in this life depends upon a correct knowledge of the objects by which he is surrounded, and upon an adaptation of these to his physical wants and necessities. As a mere utilitarian principle therefore, unconnected with those higher feelings and sympathies which lead the student of Nature from the creature to the Creator, this pursuit comes recommended to us as closely connected with questions affecting the health, the longevity, and the daily comforts of the community.

(To be continued.)

A PRACTICAL VIEW
OF
LYTHOTRITY:
WITH REMARKS ON
THE LATERAL OPERATION OF LITHOTOMY.

BY MR. ASTON KEY.

The merits, the dangers, and the difficulties of Lithotrity are not yet so justly appreciated by the profession as to render an examination of them either unnecessary or uninteresting. The former are magnified by its friends and advocates: the latter, by its enemies. The object of this paper shall be, to exhibit, in its proper light, the advantage which this operation holds out; while the dangers to which it exposes the patient shall be fairly stated and impartially canvassed.

Lithotrity is, in some respects, peculiarly unfortunate. It is an art that has done much, and promises more, toward the alleviation of human suffering; and is creditable alike to those who first discovered its practicability, and to those who have advanced it. But it has suffered, I had almost said, equally from its friends and from its opponents. That it should meet with enemies who would seize every opportunity of decrying it, is what a very little acquaintance with human nature, or with the progress of discovery generally, would lead one to expect. Some would endeavour to check its advances, from a dislike of innovation: others would distrust and doubt its merits, from the circumstances of its being an exclusive art, and not practised by the general surgeon. There are others, again, who would dislike to see the operation of lithotomy superseded, from less worthy motives: and there is yet another class of persons, who, with honest intentions, but with lack of knowledge and judgment, declaim loudly against the operation, as unsuccessful and unsafe. This kind of opposition lithotrity has met with in abundance. The question for the dispassionate observer to answer, is, Whether this has not been owing rather to the exaggerated reports of its merits by its professors and its advocates, than to the active hostility of those who doubt its pretensions.

In this country, at least, it will not be maintained that lithotrity has not met with the encouragement it deserved, both from the profession and the public. The latter was led to believe, that a painless, a certain and safe operation for the removal of one of the most afflicting maladies was about to be introduced; and, with this impression, those who have laboured under the disease flocked to the lithotritist, to save them from the horrors of the knife. The majority of the profession gave to it the support which it seemed to deserve—some to the verge of credulity, believing it to be altogether free from danger: others, with more discretion, regarding it as an operation that might, in many cases, avert the danger of

lithotomy. Whatever may now be the estimate of the value of lithotrity, its first introduction was hailed generally as a valuable acquisition to surgery: and if its credit has in some degree declined, and its merits appear diminished, in the eyes of English surgeons, it is due to its own extravagant pretensions, and to a presumptuous and ill-judged competition with lithotomy, which, in a fair examination, it will hardly be found to maintain.

It is an invidious and a painful task to advert to the want of candour justly complained of in those who have exclusively practised the art. To this cause is to be attributed much of the distrust of lythotrity that many well-informed persons express. There has been, it cannot be denied by its friends, a blamable suppression of the dangers of the operation, and a withholding from the profession of unsuccessful and fatal cases; the patrons of the art having assumed the characters rather of strenuous partisans, than scientific cultivators of a useful branch of surgery. It would appear, that, in too many instances, the interests of lithotrity have been sacrificed to those of its professors. To forward the ends of the practitioners of the art, it has been unwisely stated to possess advantages over lithotomy to which it has no claim. Lithotrity neither needs nor deserves such false support: it has merits of its own, by which it may fairly be tested; and should shun competition with an operation that has been sanctioned by the experience of years. Before a judgment can be formed of the comparative success of the two operations, the exclusive advocates of lithotrity must state the results of their cases, with as much candour and fairness as the English lithotomists have already evinced.

At present, there is but little chance of obtaining such a statement of the results of cases, as would enable us to draw a tolerably correct inference as to its comparative success. In France, the question has assumed the shape of a contest but little creditable to those engaged in it; but out of which, perhaps, something like the truth may hereafter be obtained. One party places lithotrity in a light too favourable for an unprejudiced person to give credence to their statements: the other, with equal vehemence, is opposed to the operation, and denounces it as a highly dangerous and unsuccessful branch of surgery. I have attempted in vain to reconcile the conflicting statements of Messrs. Velpeau and Civiale of the success of the operation; and can only suppose that the latter, when he enumerates 236 patients cured out of 244, employs the word "cured" in a different sense from that in which we understand it. That so large a proportion of cases of lithotrity should be cured, is a statement that surely carries with it its own refutation. M. Velpeau's reduction of this large number to 130 probably brings it nearer the truth.

It is needless for me to enter into the controversy between these two surgeons, as to a matter of fact. The data are not sufficiently explicit to enable me to solve the question, whether M. Civiale has overstated his success, or M. Velpeau has been led to take too unfavourable a view of M. Civiale's table of results: and even if I could arrive at the truth, it would be foreign to my purpose. It is not my intention to be a partisan of either side of the controversy; nor is it my object to take up lithotrity as opposed to lithotomy. The question has, indeed, assumed this aspect. It has grown into an unbecoming contest between the lithotritist and the lithotomist; as if the two operations were wholly opposed to one another, and could not be made available, each in its own and proper sphere.

If it be intended, by the exclusive advocates and practitioners of lithotrity, to maintain, that, indiscriminately applied to all cases of stone in the bladder, it is a less painful, more safe, and more successful operation than lithotomy, I must be allowed to express my doubt. If it be proposed to introduce lithotrity to the entire exclusion of the knife, as an operation that holds out a better prospect to the sufferer under stone for the cure of his malady, I am disposed to think that society would suffer by the exchange: or if, in support of their exclusive views, the advocates of lithotrity claim for their operation a superiority of success, as compared with the results of lithotomy, I am prepared to say, and to prove, that the history of English lithotomy furnishes records of success that leaves lithotrity far behind.

To show that lithotrity is neither so universally successful, nor so exclusively applicable as might be inferred, I shall briefly detail the cases that have passed under my observation, occurring in the practice of the two most able lithotritists of the day. In each of these cases I was consulted.—Others, strongly militating against the exclusive use of the operation, have come to my knowledge; but which,

as not occurring in my own practice, I forbear to mention.

Case 1.—In 1829, an Irish gentleman, Mr. H—, about 64 years of age, arrived in this country from Paris, to obtain professional advice for a vesical disorder. I learnt that he had undergone the operation of lithotrity under M. Civiale, about six weeks previously; and that the operation had been followed by acute inflammation of the bladder, for which M. Amusat was consulted. As soon as the cystitis subsided, he came over to this country, labouring under symptoms of stone in the bladder, which, in severity, I have only on one occasion seen exceeded. The desire to void urine was nearly incessant, and the attempt excruciating, and often unsuccessful. He lingered out a miserable existence for a few weeks, receiving such relief as medicine could afford. On passing a flexible catheter to relieve the bladder, I discovered a considerable fragment of stone. Sir Astley Cooper saw this gentleman several times, and considered him beyond the reach of any operation. He died with his sufferings unmitigated.

Case 2.—Mr. E —, between 50 and 60 years of age, had been annoyed for some time with symptoms of disorder, which Mr. Giraud, of Feversham, found to arise from a calculus in the bladder. He came to town, at the request of Mr. Giraud, to consult me. Finding the stone small, I gave him the alternative of the two operations. He preferred lithotrity; and went to a well-known operator, with a note of introduction from me. He underwent the operation; and the stone was broken down at several sittings. Before returning to Feversham, he called upon me, and seemed feverish and ill; and I learnt subsequently, from Mr. Giraud, that he died, with typhoid symptoms, shortly after his return into the country. An abscess was formed in the neck of the bladder, at the base of the prostate gland.

Case 3.—A gentleman from the country, a patient of Mr. Elliott, of Stratford, was discovered to have stone in the bladder, and consulted me respecting it. Finding it to be small, I proposed to break it down; and employed Charrière's drill-instrument for the purpose. Meeting with several obstacles in the attempt, I abandoned it; and he afterwards was placed under the care of the same lithotritist, who broke up, as I was afterwards informed, a small phosphatic calculus. The patient left town with a very irritable bladder, and suffering much in voiding his urine. I subsequently heard, from Mr. Elliott, that he lived for twelve months, with increasing suffering. On his death, the bladder was discovered to be diseased, and several stones were found in it.

Case 4.—I was desired to visit Mr. N—, aged 70, with Mr. Burrows, surgeon in the city, in order to ascertain if he had a calculus. He had been supposed to labour under stone, but it had not been detected. On sounding him, a calculus was immediately struck by the instrument, and gave me the impression of being large. I explained to him the different operations that might be performed for his relief; and he gave the preference to lithotrity. The same operator met us at the patient's house; and sounded him with care, in order to ascertain the size of the stone, and the condition of the bladder. The former he discovered to be above the ordinary size; and the latter so irritable and contracted, that it would admit of a very small quantity of water only being injected. Under these circumstances, he was thought an unfavourable subject for lithotrity. I therefore removed the stone by the lateral operation, in the presence of the lithotritist and Mr. Burrows. The operation was difficult; and the extraction of the stone not easy, on account of its size, and the enlarged state of the prostate gland. He was convalescent at the end of the second week: and has remained, up to the present time (nearly five years), free from any symptoms of his former disorder.

Case 5.—Admiral C— wrote to me from Exeter, to make some inquiry respecting the operation of lithotomy; as he was suffering from a calculus in the bladder. I replied to his inquiries, and was requested to make the necessary arrangements for cutting him. In the meantime, I was informed, by a friend, that he had placed himself under the care of the same lithotritist, and that the stone had been successfully broken down. Admiral C— left town, but quickly experienced symptoms of a return of his disorder; and one or two fragments were, I believe, again detected, and crushed. He was thus relieved for a time; but experienced a second return of his pains, and died not long after his return into Devon. On examination of his body by a surgeon at Exeter, six or seven calculi were found, formed, as I was told, on the remnants of the original calculus.

Case 6.—About nine years ago I operated on Mr. Saunders, of Tottenham, and removed a lithic-acid calculus. He recovered in a few days after the operation, which was performed with the assistance of Mr. Holt and Mr. Edward Cock. About three years ago he came to me again, with symptoms of stone; and, on sounding him, I discovered a small one, and told him it was small enough to be broken down. He placed himself under the care of the same lithotritist, who crushed a small phosphatic calculus. He left town as soon as he was pronounced cured. Almost immediately after his return home, his pains in making water increased so much, that he said the pain of the stone was as nothing. He became feverish; and his bladder would not retain urine for an hour. I saw him, at the request of his surgeon, Mr. Moon, and thought that he might have some fragments remaining in his bladder. I passed a catheter, but could not detect any. His extreme irritability of bladder prevented any accurate examination by injecting it with warm water. He was averse to this latter measure, from the pain which he had always suffered when it had been formerly done. He died without any mitigation of his symptoms taking place.

Case 7.—In 1834, Dr. Cobb requested me to meet him in consultation respecting a Mr. L—, from Kent, who was suspected to have stone in his bladder. I sounded him, and discovered a stone of a size well adapted for lithotrity; and as his bladder was not irritable, it was decided that the same lithotritist should operate upon him. The operation was performed at several sittings, and with success. I sounded Mr. L—, at the operator's request, before he left town, and could not discover any particle of stone remaining. Mr. L— also expressed himself quite relieved from his former syptoms. He remains well, October 1836.

Case 8.—I met Mr. Finch of Greenwich at the house of a gentleman nearly eighty years of age, who was much distressed by very urgent symptoms of urinary calculus. I was informed, that a lithotritist had sounded him, and, from his age, and the great irritability of his bladder, declined to operate. His health being good, I saw no objection to lithotomy being performed, notwithstanding the enlargement of his prostate gland, and the irritable state of the mucous lining of his bladder. The operation was performed in the presence of Sir Richard Dobson, Mr. Finch, and Mr. Lawson: it was difficult, on account of the great enlargement of the body and third lobe of the gland; and tedious, from the number of stones, which were found to amount to twenty-seven. His convalescence was retarded by one or two small calculi passing by the wound; and by an abscess of the prostate gland, that burst into the rectum. The symptoms of irritation caused by this subsided; and when I heard of him, he was free from stone symptoms, and was in the enjoyment of good health.

Case 9.—Mr. S—, a patient of Dr. P—, was found to labour under retention of urine, caused by the presence of a small calculus in the bladder. He was lately placed under a lithotritist's care, for the purpose of operation. The stone was crushed, and the patient supposed to be cured. I subsequently met Mr. S—, at the house of Dr. P—, and heard him describe symptoms that indicated the presence of fragments in the bladder. I expressed this opinion to him; and told him to lose no time in applying to a lithotritist. Whether any further attempt was made to relieve him, I did not learn; but he was seized with bleedings from the bladder, which, joined to the irritation that he experienced, in a week or two destroyed him. On a post-mortem examination, several calculi were found in the bladder; and each was discovered, when broken, to be formed on a fragment of the crushed stone. A fungus had also shot forth from the cervix vesicæ, from which the bleeding had taken place.

Case 10.—Mr. C—, a surgeon, was brought to me by Dr. Gordon, in order to ascertain if he had stone in the bladder, as certain symptoms, of which he complained, were considered to depend on the presence of a calculus. On sounding him, I struck a small calculus; and he expressed a desire to undergo the operation of lithotrity, under the same operator. After one stone was broken down, a second was discovered; and he underwent several operations; the operator telling him that he had crushed several entire calculi. Mr. C— returned home, assured that he was freed from the cause of his disorder. I saw him in three weeks after the last operation, and his bladder still continued to be irritable; but this symptom gradually ceased; and he appeared, when I last saw him, to be altogether freed from his disorder.

Case 11.—Mr. C—, from Yorkshire,

aged sixty, came to town, for the purpose of placing himself under the same lithotritist's hands, for the operation of lithotrity. His bladder was so irritable, that water was with difficulty injected into it. After trying to allay the irritable state of the bladder for six weeks, the operator told him that his was not a case for lithotrity. I was requested to see him. I found him with an exquisitely sensitive bladder, affected with a bloody catarrh: his pulse 120; skin hot; and desire to void urine continual. The operation of lithotomy appeared to promise no success, especially as he had lost a great deal of flesh during his visit to town. I endeavoured to allay the irritation caused by the previous introduction of instruments, and succeeded to a certain extent. On sounding him, I discovered a large stone, and a large prostate gland. The operation was performed at the end of January, in the presence of Mr. Camplin and two young friends. It was difficult, on account of the stone being closely embraced by the bladder: it measured five inches and a half in its widest circumference. He was slow in recovering; the bladder still remaining irritable, and continuing to secrete a bloody mucus. The wound healed soundly, and his appetite and rest returned; and before he left town, the bladder had, in some degree, lost its extreme irritability, under the use of the uva ursi. I heard of him during the past summer, and he was in the enjoyment of good health.

Case 12 occurred in the person of a surgeon in active practice, who was seized with considerable hæmaturia after exercise, and soon complained of symptoms that gradually assumed the character of vesical calculus. On sounding him, a small stone was discovered; and he placed himself under the care of a lithotritist. The stone was crushed after three operations, and he obtained entire relief from his disorder. He now remains well.

Of these twelve patients, three were cured, and three underwent the operation of lithotomy. Of the remaining six who died, one sunk with abscess in the prostate gland soon after the operation; four with protracted sufferings, in consequence of fragments remaining in the bladder; and one with disease of the bladder, brought on or aggravated by the operation; but whether there were fragments left in the case of Mr. S— I was unable to ascertain during life, and a post mortem inspection was not made.

I believe that no surgeon conversant with lithotomy would expect so unsuccessful a result in these cases if they had been all submitted to the knife. The three patients who could not undergo the operation of lithotrity, but were afterwards compelled to seek relief from the knife, recovered: and it is but reasonable to conclude, that some of the unsuccessful cases would have had a better result, had they been subjected to the same operation.

In the detail of the cases above mentioned, I trust it will not be supposed that I wish to cast any suspicion on the skill of the operators. I believe that all that lithotrity, in the most skilful hand, could effect, was done by the two able operators under whom the cases occurred. It is not the skill of the lithotritists, but the capability of the operation, that it is intended to impugn. I wish to show, that, as an exclusive operation for the removal of stone from the bladder, lithotrity cannot maintain that rank which it has been made to assume; and that if indiscriminately adopted, to the abandonment of lithotomy, it would be found inferior to the latter operation, both in safety and success. The new operation should, on no account, be regarded in the light in which its exclusive advocates would place it—that is, as a substitute for the old; but as a valuable adjunct to it, and as furnishing the surgeon with an additional means of relieving a most alarming and painful disease. If this view be taken of it, it will, I think, be found to be one of the most useful inventions that modern surgery has added to her resources: for in many cases, if selected with judgment, it is not only equally effective with lithotomy, but more safe, and less painful in the performance.

It would be an injustice to an ingenious English surgeon, to make allusion to the infancy of the art, without coupling his name with the earliest attempts made to break down stones in the bladder.* Mr. Elderton has unquestionably the merit of being the first to construct an instrument for the purpose of crushing a calculus, and enabling the patient to discharge it by the urethra. I need not describe the instrument, as an account of it,

* It appears that he constructed this instrument so long ago as 1811.

with a drawing, was published by him in the *Edinburgh Medical and Surgical Journal* for April, in the year 1817. It is not used with a drill, as the earlier French instrument; but acts, on the principle of some of the modern inventions, with a screw and lever.

CASE OF EXTREME DEFORMITY.

To Dr. Ryan.

My dear Sir,—I shall feel obliged by your inserting the following curious case in your very useful and scientific Journal. I am, dear Sir, faithfully yours.

JOHN MC DIVITT.

Canterbury, May 11, 1837.

Sarah Spong, æt. 26, became, twelve years ago, the subject of *morbus coxarius*, for which cupping, leeches, blisters, and other suitable remedies, were had recourse to, with only partial benefit. About twelve months afterwards, she was attacked with an excruciating pain in the head, which was followed by a discharge of sanious pus from the left ear. This completely relieved the pain, which frequently, however, recurred and was always terminated by a similar discharge. On one occasion, immediately consequent upon the extraction of a decayed tooth, a large quantity of pus escaped from the left antrum.

When the patient had suffered for some time in the manner above described, the muscles on the left side of her face became paralysed, and also, partially, those of the *right* upper extremity. The left eye, without any apparent defect, lost the power of vision, and the eyelash together with the hair of the eyebrow, on the same side fell out, and have never since been reproduced. At the same time she was deprived also of speech, and what was very remarkable, she used, regularly at nine o'clock every night to thrust her tongue out of the mouth, and to keep it in that state till five o'clock on the following morning, at which hour it was again withdrawn. After a period of eighteen months, this practice was abruptly discontinued, and her speech was suddenly restored, on the discharge of an unusually large quantity of pus from the left ear. The affected eye has never recovered the power of vision. It looks somewhat atrophied, but is otherwise free from visible defect.

About six years ago she was attacked with severe pain in the *right* side of the head, which was much relieved by cupping, and altogether removed by the flow from the right ear of a small quantity of pus. During the continuance of the pain, the eyelash and hair of eyebrow on this side also began to fall out, but ceased to do so on its subsidence.

Three years since she had a mild attack of scarlet fever, and, within the last twelve months, one of modified small-pox, having had the vaccine form of the disease when she was four years old. Soon after, the affection of the hip-joint commenced, she menstruated for the first time, and continued to do so regularly for a period of three years, and in an irregular manner for six years longer, since which last time the catamenia have been entirely suppressed.

When the disease had advanced so far as to confine the patient to bed, which she has not left during the last eight years, the affected member began to be flexed upon the abdomen in an oblique manner, and gradually the right limb also became similarly bent. This unnatural position of the limbs has not only been ever since maintained, but the deviation has gone on increasing until, at present, both thighs are thrown towards the right side of the body, so that the knees approach within a few inches of the right axilla. The left thigh, which is the more elevated, passes obliquely across the abdomen, touching the cartilages of the right false ribs. The legs are bent towards the left side, the left lying over the right thigh, and with its heel touching nearly the left ilium, from which, to prevent the effects of pressure, it is separated by two folds of soft linen rag. The ilium, from the distorted position of the limb, is rendered very prominent, and is made to present itself on the anterior surface of the body, on a plane nearly three inches more elevated than the thorax. Over the trochanter is a large caustic issue with a glistening red surface, which, without any irritating application, has kept open for several years. When the discharge from it happens to be less copious than usual, headache, with a sense of fulness of the cerebral vessels, and a general febrile irritation speedily supervene.

The sternum is drawn towards the spine, so as to form, in its upper third, a hollow groove, leading inferiorly to a rounded cup-like cavity, nearly three inches in depth. The ribs on both sides bulge out, yet the lateral diameter of the right side of the thorax is apparently not

more than 2½ inches, that of the left is somewhat more. The spine projects posteriorly to an extent corresponding with the depression of the sternum.

The skin is dry and scaly, and there is extreme emaciation; the upper extremities, however, being somewhat less wasted than the lower. The countenance has a resigned and tranquil look, not expressive even of discomfort, although she still occasionally suffers from headache. The left ear constantly gives issue to a thin sanguineous discharge. The left side of the face, from the total loss of its eyelash and eyebrow, as well as the partially paralized state of its muscles, presents a striking contrast with the natural appearance of the right.

She is several times during the day attacked with fits of a very peculiar kind, each paroxysm lasting about five or six minutes. Her arms are suddenly thrown out in an extended form, the fingers being separated from each other, quite straight, and perfectly rigid. The eyelids become affected with a constant tremulous motion, the eyes being for a time fixed in an upward position, then revolving alternately upwards and downwards, and then again outwards and inwards. Her lips and nostrils appear perfectly motionless, but the larynx moves slightly once or twice in the minute. A looking-glass placed near her mouth has not its transparency perceptibly diminished.

Her daily food consists of about the size of a bean of butter, and a tea-spoonful of sugar, together with about two ounces of cocoa containing a very small proportion of milk. Frequently her food, after remaining for a short time apparently in the lower part of the œsophagus, is thrown up, as if there were something obstructing its passage into the stomach. She has, for years past, habituated herself to the use of laudanum, of which she now takes three drachms daily.

She passes usually three small lumps of dark fæces once a week, and her urine, which is strongly alkaline, amounts in the same period to about four ounces, a very small quantity being passed once in every day.

Her pulse is weak, and beats sixty-six strokes in the minute. The heart's action is so feeble as to be scarcely distinguishable. The respiratory murmur is abrupt, the cells appearing to be imperfectly dilated. The mental faculties are unimpaired.

The foregoing account of the case, together with the accompanying drawing, was taken in the beginning of September, 1836. Towards the middle of January last, the patient was attacked with influenza, from which, in a few days, she seemed to recover, but a relapse occurring about a fortnight afterwards, the symptoms presented themselves in a more aggravated form, and the disease, not yielding to the remedies employed, carried her off on on the 15th of February. The body was examined on the 17th by Mr. Sankey of Wingham (who had always attended the case) in the presence of the Rev. Charles Oxenden, Mr. Jameson, and myself.

The body was emaciated to an extraordinary degree. The position of the limbs was in no wise altered, nor could they be straigtened except by a force sufficient to cause laceration. The ribs, which might be counted as readily as if they were altogether bare, were less transverse than they appear in the drawing. The right side of the thorax projected posteriorly nearly an inch and a half more than the left. The spine was curved backwards, also a little towards the left side. The back presented the scars of two or three bed-sores.

The left hip-joint contained about two drachms of glairy fluid. The head of the femur was still within the acetabulum, the capsular and inter-articular ligaments remaining entire. It was deprived of its cartilaginous covering except for about half an inch around the insertion of the *ligamentum teres*. Its substance was so soft as to be cut readily with the scalpel, and its cells were much enlarged, being filled with a viscid fluid exactly resembling strained honey.

The left eye was less prominent than the right, but otherwise it was healthy. The supra-orbital nerve and artery on the left side (that wanting the eyebrow, &c.) appeared natural. The temporal muscle, on each side, consisted merely of a few fasciculi of pale and almost pulpy fibres.

The convolutions of the brain were large, and the surface appeared unusually vascular. The arachnoid was thickened, and raised up, particularly at the base of the brain, by a layer of semifluid gelatinous matter. The substance of the brain presented, on incision, numerous bloody points. The ventricles contained each a small quantity of limpid serum. The choried plexus, on each side, was enveloped in gelatinous matter. Of the

septum lucidum only a few shreds remained. The optic nerves were healthy. On the left *crus cerebri* was an oblong patch, about eight lines by five, affected with *ramolissement*, presenting an uneven, slightly hollow surface, of an ash-grey colour mingled with dark lines. The cerebellum and medulla oblongata were healthy, except that the former was, like the cerebrum, unnaturally vascular. There was nothing remarkable in that portion, whether of the brain or membranes, contiguous to the *pars petrosa* of the temporal bone; nor did this, on being sawn through, exhibit any traces of disease, notwithstanding the very profuse suppurative discharge from the left ear. The whole auditory apparatus on this side appeared natural.

The ribs were so soft that their bony portion could be readily divided with a scalpel. On removing their anterior half together with the sternum, and laying back the upper portion of the abdominal muscles, the following arrangement of parts presented itself. The diaphragm was much arched, being pushed up by the liver on the right side, and on the left by the stomach, which, distended with gas, mounted as high as the intercostal space between the fifth and sixth ribs.*

The heart was placed vertically in the centre of the chest, and separated to the extent of an inch from the thin membranous looking diaphragm, by a straw-coloured fluid, which, contained in the pericardium, was seen distinctly through its attenuated transparent coats. The right lung did not descend by fully three inches as low as the left, and was also separated from the diaphragm by serum, of which a large quantity was contained in both pleural sacs. The heart was somewhat flabby, and rather under the natural size. Its surface, particularly near the root of the aorta, was covered with patches of an albuminous effusion. Its coronary vessels were congested with black blood. The wall of the right ventricle was scarcely thicker than that of the auricle. The left ventricle was affected with concentric hypertrophy, its cavity being very small, and its proper wall measuring seven eighths of an inch in thickness: the septum measured fully $\frac{3}{4}$ of an inch.

The right lung (particularly that portion of it contained in the posteriorly receding part of the thorax) was much compressed, congested, and hepatized, and presented when cut into numerous spots of whitish granular deposit. The bronchial ramifications contained a small quantity of purulent matter. Their lining membrane was continuously of a deep claret colour, which extended upwards to a considerable distance above the bifurcation of the trachea. The bronchial ramifications of the left lung also contained pus, their lining membrane being of a clear red colour. The bronchial glands were much enlarged.

The spine, which has been described as projecting on the outside, and curved slightly towards the left, was found, upon opening the thorax, to be twisted so as to shelve considerably over its right side, thus partially covering that part of this side which projected posteriorly, and which contained, as mentioned above, the more condensed portion of the right lung.

The mesentery was covered with a

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* This is a fact worthy of being borne in mind by those who practise auscultation. When the diaphragm is thus pushed up by the distended stomach, the left side of the thorax inferiorly emits, on percussion, an unnaturally clear sound, the respiratory murmur over the same space is inaudible, and there is produced, by the intermixture of the gaseous and liquid contents of the stomach, a sound exactly resembling the *metallic tinkling* of Pneumo-thorax. The absence, in such a case, of this serious disease would not be certainly indicated by the dulness on percussion superiorly, for that might be accounted for by supposing the costal and pulmonary pleuræ to adhere above the opening in the lung. In some cases a *plashing* sort of sound is heard, which one might readily mistake for air passing through the semi-liquid contents of a half emptied vomica. An instance of this kind I lately met with in a patient labouring under pleurisy.

In a case of Pericarditis which was under my care in the Kent and Canterbury Hospital some months ago, there was heard, synchronously with the heart's pulsation, a sound resembling the metallic tinkling, and which could be attributed to nothing else than the motion given by the tilting of the heart, through the diaphragm, to the liquid and gaseous contents of the distended stomach.

I think it enough merely to mention this source of fallacy in diagnosis, as the positive and negative symptoms, by attention to which it may, in each individual case, be guarded against, must be known to every well-informed practitioner.

thick layer of gelatinous effusion, similar to that found on the surfaces of the brain and heart. The liver, compressed and flattened, so that its largest transverse diameter did not exceed two inches, was almost vertical in its position, the right lobe being inferior, and not extending below the margin of the ribs. Its substance was very firm, as was also that of the spleen. The left kidney appeared larger than the right, both being knobulated and of scirrhous hardness. Their cortical substance had given place to a yellow granular deposit, intermixed with reddish lines. The renal capsules were unusually large, and converted into a thick cartilaginous substance, their sides adhering closely by means of an intervening dense fibrous layer. The other organs presented nothing remarkable.

The spinal marrow unfortunately could not be examined.

The London Medical

AND

Surgical Journal.

Saturday, May 20th, 1837.

THE LONDON HOSPITAL FEE SYSTEM.

It is an important fact, which ought never to be lost sight of, by those who legislate for medical education, that the medical officers of the London Hospitals have long pursued a system of extortion, and levied immense sums of money from the Student, unexampled not only throughout the other Schools of the British dominions, but unparalleled in the medical Seminaries of all the rest of Europe. The means which they have adopted to bring this system of extortion to its present high degree of perfection, displays as much ingenuity in the Council of the Royal College of Surgeons, as it exhibits a total want of that high moral feeling and honourable line of conduct for which that body is pre-eminently distinguished. Nothing could be more sagaciously contrived than that the Council men, every one of whom was connected, directly or indirectly, with one of the metropolitan hospitals, should pass by-laws to compel the unfortunate Student to attend one of their recognized institutions for an extended period, before he could be qualified to offer himself as a candidate for one of their valuable diplomas. By this admirable, and no less praiseworthy legislation, the liberal council of Lincoln's Inn Fields were enabled to raise the extortion fee for hospital attendance to its present enormous amount. It is not therefore to be wondered at, that the vultures of Lincoln's Inn Fields should have been seriously alarmed, when the Joint Stock Company of Gower Street appended an hospital, to their school, not for any avowed purpose of charity, but for clinical instruction, offering the attendance fee at about half the price of the old rotten establishments. And it is still less surprising, that our hospital *pures* should be now under a still more serious alarm, it being whispered that the Senate of the New Metropolitan University contemplate the destruction of the hospital monopoly, and act in conformity with the opinion so ably advocated by Mr. Lawrence, on the great advantages which the Student derives from attending small hospitals.

However praiseworthy it may have been in the different lecturers of the Gower-street institution, not only to have reduced the fee for attendance at the North London Hospital, but for having given up all the money thus received in order to defray the expenses of the establishment, it was more than could be expected of man, that such a system of generosity and benevolence should go on

for any lengthened period. The *liberal* professors of that institution were satisfied with the *indirect* benefit they would receive from the inducement which the low price of the hospital held out to the student, and the reasonable calculation they made, that the increase in the number of students, along with a large fee for each class, would fully compensate them for their *gratis* labours in the hospital. In making this calculation, however, no allowance was made for the possibility of students entering to the hospital who did not attend any of the classes of the medical school. In consequence, of not less than fifty of those students who were enrolled last season, in order to qualify themselves to become candidates for diplomas, by availing themselves of the small fee of the hospital, though reluctant, and conceiving it unnecessary to submit to some of the soporific discourses, the eminent professors have thus been deprived of that golden tribute of respect they considered due to their merits, and a fair remuneration for their valuable services in the hospital. The Joint Stock Company of Gower-street have now, therefore, under their most serious deliberation, to contrive some mode or invent some plan, by which they could secure for the benefit of the physicians and surgeons of their hospital, a fair remunerating price, some kind of per centage, on all such students as attend the North London Hospital, but who do not enter as pupils to any of the classes of the College. A rational plan for accomplishing so desirable an object, and little difficulty could have occurred in fixing an adequate sum as an additional fee to be paid by such students, had not the medical staffs of some other hospitals, more particularly those of the Middlesex and the Westminster, been deliberating on the expediency of reducing their attendance fee, as if they adopt such a measure, of the wisdom of which there cannot be a doubt, the advantages which the North London Hospital has hitherto enjoyed of giving a commodity at half price, will be irretrievably lost. It is, therefore, extremely probable, that the wiseacres of Gower-street will have the sagacity to contrive some other ingenious mode of remuneration. The time, indeed, appears fast approaching, when the whole system of hospital monopoly will be destroyed, and when the medical officers of our public charities must look to some other mode of remuneration than the fraudulent system of extortion which has been so successfully, and which it is lamentable to reflect, has been for so long a period practised on the unfortunate student of medicine.

THE ANATOMIST.

SUTURES OF THE CRANIUM AND FACE.

Frontal suture, commences a little behind the external angular process of the frontal bone, at the upper termination of the great wing of the sphenoid bone, and, inclining backwards, extends across the cranium to the opposite corresponding point, connecting in its course the frontal to the parietal bones.

Lambdoidal suture, commences at the union of the petrous portion of the temporal bone with the parietal and occipital bones, and extending across the posterior part of the cranium to the opposite corresponding point, connects the occipital to the parietal bones.

Sagittal suture, extends from the angle of the occipital bone forwards, connecting in its course the parietal bones and corresponding to the median line; it generally terminates in the coronal suture, but is occasionally prolonged to the nasal bones, dividing the frontal bone.

Squamous suture, corresponds to the semicircular edge of the squamous portion of the temporal bone, and connects it to the great wing of the sphenoid bone, and to the parietal bone.

Additamentum suturæ lambdoidalis,

extends from the termination of the lambdoidal suture to the foramen lacerum posterius, and unites the mastoid process of the temporal bone to the occipital.

Additamentum suturæ squamosæ, extends nearly horizontally backwards from the posterior termination of the squamous suture to the lambdoidal suture, connecting the upper extremity of the mastoid portion of the temporal bone to the parietal bone.

Sphenoidal suture, extends around the irregular margins of the sphenoid bone connecting it to all the bones of the head, and to the malar, superior maxillary, and palate bones.

Ethmoidal suture, surrounds the ethmoid bone, connecting it to the frontal, nasal, superior maxillary, lachrymal, and palatine bones, and to the vomer.

Transverse suture, connects the bones of the face to those of the head.

Zygomatic suture, coresponds to the junction of the temporal with the malar bone.

ORBITS.

The orbits are two pyramidal cavities, the bases of which look outwards and forwards and their apices in the contrary direction; so that two lines passing through their axis if prolonged posteriorly would decussate at the cella tursica. Each orbit is formed of seven bones, three of which, viz. the frontal, sphenoid and ethmoid, are common to both orbits; the other four, viz. the lachrymal, superior maxillary, malar, and palate bones belonging to the orbit of their corresponding side. The foramina in the base of the orbit are, the supra-orbital, the infra-orbital and the upper orifice of the nasal duct: within the orbit are the optic-foramen, the superior lacerated foramen, the spheno-maxillary fissure and the two internal orbital foramina.

TEMPORAL FOSSA.

Placed on the side of the cranium is bounded by the frontal, sphenoid, parietal and temporal bones, and lodges the temporal muscle.

ZYGOMATIC FOSSA.

Extends from the temporal fossa downwards and is bounded by the zygomatic arch, the superior maxillary bone and the portion of the great wing of the sphenoid bone below its crest.

PTERYGO MAXILLARY FISSURE,

Lies deep in the zygomatic fossa, is bounded by the pterygoid processes, the tuberosity of the superior maxilla and the nasal process of the palate bone; and communicates with the spheno-maxillary fissure.

ARTICULATIONS.

TEMPORO-MAXILLARY ARTICULATION.

Bony formation. Glenoid cavity of temporal bone and condyle of inferior maxillary bone.

External lateral ligament,—origin, zygomatic process and tubercle of temporal bone. *Insertion,* outer side of the neck of condyle of lower jaw.

Internal lateral ligament,—origin, spinous process of sphenoid bone. *Insertion,* margin of orifice of inferior dental canal.

Stylo-maxillary ligament,—origin, styloid process of temporal bone. *Insertion,* angle of inferior maxillary.

Synovial membranes, one is reflected from the cartilaginous surface of zygomatic eminence and glenoid cavity over the superior surface of the fibro-cartilage. The other covers the under surface of the fibro-cartilage and is reflected over the condyle.

Inter-articular, or fibro-cartilage, of an oval figure, thick in its circumference, thin in the centre. Divides the joint into two.

Capsular ligament,—origin, zygomatic eminence, and glenoid fissure. *Insertion,* neck of lower jaw.

OCCIPITO-ATLANTOID ARTICULATION.

Bony formation, condyles of occipital bone and superior oblique processes of atlas.

Capsular ligament, imperfect.

Syonvial membranes, cover the opposed cartilaginous surfaces.

Anterior ligament,—origin, anterior edge of foramen magnum. *Insertion,* upper edge of atlas anterior to its oblique processes.

Posterior ligament,—origin, posterior edge of foramen magnum.—*Insertion.* upper edge of atlas behind its oblique processes.

OCCIPITO-AXOID ARTICULATION.

Moderator, or oblique ligaments,—origin, from each side of odontoid process. *Insertion.* Inner side of each condyle.

Apparatus ligamentosus,—origin, lower part of cuneiform process posterior to

odontoid process. *Insertion*, superior part of transverse ligament of atlas and bodies of second and third vertebræ.

ATLANTO-AXOID ARTICULATION.

Bony formation. The anterior portion of the spinal hole of the atlas and odontoid process of axis

Anterior and posterior ligaments, as in all the other vertebræ.

Transverse ligament, attached on each side to inner edge of oblique process of axis and by means of apparatus ligamentosus to cuneiform process above, and body of axis below.

Synovial membranes. One between posterior surface of odontoid process, and anterior surface of transverse ligament. Another covers the opposed cartilaginous surfaces of the atlas and odontoid process.

COMMON VERTEBRAL ARTICULATION.

Bony formation. Opposed surfaces of the bodies and oblique process of the vertebræ.

Anterior vertebral ligament, extends from axis to sacrum adhering to the bones and the inter-vertebral substances.

Posterior vertebral ligament, extends along the posterior part of bodies of vertebræ in front of spinal canal.

Inter-vertebral ligaments, or fibro-cartilages, are placed between the bodies of all the vertebræ, except the atlas and dentata, and united to their flat surface above and below. They are thicker in front than behind in the neck and loins, and the contrary in the back.

Synovial membranes and ligamentous fibres connect the oblique processes.

Ligamenta sub-flava, are situated between the laminæ of the vertebræ from the second to the sacrum, completing the posterior part of the spinal canal.

Supra-spinous and inter-spinous ligaments, connect the spinous processes of the vertebræ.

Inter-transverse ligament, connect the transverse processes.

COSTO-SPINAL ARTICULATION.

Bony formation. Heads, and tubercles of ribs and bodies and transverse processes of vertebræ.

Anterior ligament,—origin, front of head of rib. *Insertion*, side of vertebræ above and below, and inter-vertebral substance.

Inter-articular ligament,—origin, projecting ridge in the articular surface of the rib. *Insertion*, cavity in the inter-vertebral substance in which the head is received. The upper and lower divisions of this joint have distinct synovial membranes.

Inferior costo-transverse ligament, origin, neck of each rib. *Insertion*, transverse process of the vertebra above.

Posterior and external costo-transverse ligaments, connect the tubercle of each rib to the corresponding transverse process.

Synovial membranes are between the tubercles and transverse processes.

COSTO-STERNAL ARTICULATION.

The ribs are connected to the sternum through the intervention of their cartilages, which are secured anteriorly and posteriorly by ligamentous fibres.

LUMBO-SACRAL ARTICULATION.

Bony formation. Last lumbar vertebra and sacrum. These are joined together in the same manner as the other vertebræ.

Ilio-lumbar ligament,—origin, transverse processes of fourth and fifth lumbar vertebræ and back part of sacrum. *Insertion*, posterior superior spinous process and crest of ilium.

ILIO-SACRAL ARTICULATION.

The ilium and sacrum are connected anteriorly and posteriorly by short ligamentous fibres.

Great sacro-sciatic ligament,—origin, lower and back part of posterior inferior spine of ilium and back part of sacrum and coccyx. *Insertion*, lower edge of tuber ischii.

Lesser sacro-sciatic ligament,—origin, side of sacrum and coccyx. *Insertion*, spine of ischium.

SACRO-COCCYGEAL ARTICULATION.

The sacrum and coccyx are united together by a similar substance to the inter-vertebral, and by ligamentous bands anteriorly and posteriorly.

PUBIC ARTICULATION.

Fibro-cartilage, attaches closely the bones of the pubis also ligamentous fibres.

Sub-public ligament passes from the ramus of one bone to the other and rounds off the angle formed by their union.

Obturator ligament, attached to the circumference of obturator foramen, except superiorly, where the thyroid nerve and vessels pass through.

STERNO-CLAVICULAR ATICULATION.

Anterior ligament,—origin, anterior surface of sternal end of clavicle. *Insertion,* anterior surface of sternum.

Posterior ligament,—Origin, posterior surface of sternal end of clavicle. *Insertion,* back part of sternum.

Costo-clavicular ligament, — origin, lower surface of sternal end of clavicle. *Insertion.* Cartilage of first rib

Inter-clavicular ligament extends from the posterior surface of one clavicle to the other.

Inter-articular cartilage, thin below and attached to sternum ; thick above and attached to clavicle ; having a synovial membrane connected to each surface and its corresponding bone.

SCAPULO CLAVICULAR ARTICULATION.

Superior acromio-clavicular ligaments, —origin, upper surface of acromion. *Insertion,* upper part of clavicle.

Inferior acromio-clavicular ligament. Attached to under surface of each bone.

CORACO-CLAVICULAR ARTICULATION.

Conoid ligament, triangular ; base connected to the tubercle on inferior sur- of clavicle, apex at the broad part of coracoid process.

Trapezoid ligament, attached above to an oblique line on the clavicle ; below to upper part of the coracoid process.

LIGAMENTS OF THE SCAPULA.

Coraco-acromial ligament, — origin. broad from corocoid process. *Insertion,* narrow into point of acromion.

Posterior or coracoid ligament,—origin, superior costa of scapula behind the notch. *Insertion,* base of coracoid process. This ligament converts the notch into a foramen.

HUMERO-SCAPULAR ARTICULATION.

Bony formation. Head of humerus and glenoid cavity of scapula.

Capsular ligament,—origin, circumference of neck of scapula. *Insertion,* around the neck of humerus.

Coraco-humaral ligament, — origin, coracoid process. *Insertion,* anterior part of great tuberosity.

Synovial membrane is reflected over the surface of the glenoid cavity around the glenoid ligament ; lines the capsular ligament, head of humerus, and becipital groove.

HUMERO-CUBITAL ARTICULATION.

Bony formation, articular processes of humeurus, great sigmoid cavity of ulna —head of radius.

External lateral ligament. Origin, External condyle of humerus. Insertion. Annular ligament of radius.

Internal lateral ligament—origin, internal condyle. *Insertion,* inner edge of olecranon and coranoid processes.

Anterior ligament consists of thin fibres. *Origin.* principally from above internal condyle and depression on forepart of humerus, *insertion* annular ligament of radius and synovial membrane.

Posterior ligament is composed of fibres which extend from one condyle to the other, and are attached to the synovial membrane.

Synovial membrane is reflected from behind the anterior ligament to neck of radius and annular ligament. These line the sigmoid cavities of the ulna and is reflected to the lateral ligaments and tendon of the triceps muscle, which conducts it to the posterior depression of the humerus, and is then expanded over its articular processes.

SUPERIOR RADIO-ULNAR ARTICULATION.

Bony formation, lesser sigmoid cavity of ulna and inner side of head of radius.

Annular ligament—origin, anterior border of lesser sigmoid cavity of ulna *insertion* posterior border of the same cavity. It encircles the neck of radius.

Oblique ligament—origin, coranoid process of ulna, *insertion* radius below its tubercle.

Interosseous ligament connects the opposed edges of radius and ulna, its fibres descending obliquely inwards from the former bone to the latter.

INFERIOR RADIO-ULNAR ARTICULATION.

Bony formation round head of ulna, and sigmoid cavity of radius.

Sacciform ligament passes from radius to the ulna, forming a sac above the following

Fibro-cartilage—origin, styloid process of ulna, *insertion,* inner edge of radius below the ulna.

RADIO-CARPAL ARTICULATION.

Bony formation, lower end of radius ; scaphoid, lunar, and cuneiform bones.

External lateral ligament — origin, styloid process of radius, *insertion,* scaphoid bone, and by some fibres into annular ligament and trapezium.

Internal lateral ligament—origin, styloid process of ulna. *Insertion,* cuneiform bone.

Posterior ligament—origin, posterior part of radius and fibro-cartilage. *Insertion,* back part of superior row of carpus.

Anterior ligament—origin, anterior part of radius and fibro-cartilage. *Insertion,* fore part of first row of carpus.

CARPAL ARTICULATIONS.

The bones of carpus are articulated by ligamentous bands, both anteriorly, and posteriorly.

An *internal* and *external lateral ligament* attach the two rows.

Synovial membrane extends between the two rows and sends processes between the bones.

Annular ligament—origin, trapezium, and scaphoid bones. *Insertion,* cuneiform, and unciform bones.

CARPO-METACARPAL ARTICULATION.

The carpus and metacarpus are secured by fibrous bands which pass in different directions, and cover the synovial membrane.

METACARPO-PHALANGEAL ARTICULATIONS.

The heads of the metacarpus and first phalanges are secured by *lateral ligaments,* and are lined by *synovial membranes.*

INTER-PHALANGEAL ARTICULATIONS.

The phalanges are connected to each other by means of lateral ligaments, and between each of their joints is a synovial membrane.

ILIO-FEMORAL ARTICULATIONS OR HIP JOINT.

Bony formation, acetabulum and head and part of neck of femur.

Cotyloid ligament, a fibro-cartilaginous circular band adhering to the edge of the acetabulum.

Transverse ligament, attached to the opposite points of the notch, and partly filling it up.

Capsular ligament—origin, circumference of acetabulum. *Insertion* below root of trochanter major, and the two inter-trochanteric lines.

Accessory ligament—origin, anterior inferior spinous process of ilium. *Insertion,* fore part of lesser trochanter.

Synovial membrane, reflected from inside of capsule upon periosteum of neck, and cartilaginous surface of head; is continued over inter-articular ligament, and thence is reflected upon the cartilaginous surface of the acetabulum.

Inter-articular ligament or *ligamentum teres—origin,* depression on head of femur. *Insertion* by two bands into the extremities of the notch, and by synovial membrane into the fatty substance at the bottom of the cavity.

FEMORO-TIBIAL ARTICULATION OR KNEE JOINT.

Bony formation condyles of femur and head of tibia.

Ligamentum patellæ—origin, lower angle of patella. *Insertion,* tubercle of tibia.

Posterior ligament—origin, tendon of semi-membranosus muscle at internal and posterior part of tibia. *Insertion,* external condyle of femur.

Internal lateral ligament—origin, internal condyle of femur. *Insertion,* internal condyle of tibia and semilunar cartilage.

External lateral ligament—origin, external condyle. *Insertion,* head of fibula. This ligament is often divided into two by the tendon of the biceps muscle.

Synovial membrane lines the back part of the patella, from which it is reflected two or three inches on the fore part of the femur, and on its condyles; from thence it is conducted by the crucial ligaments to the semi-lunar cartilages, and head of tibia.

Alar ligaments arise from each side of patella and unite below that bone. They are mere folds of synovial membrane.

Ligamentum mucosum—origin, fatty substance behind ligamentum patellæ. *Insertion,* hollow between the condyles. It also is a fold of synovial membrane.

Transverse ligament, attached to the anterior portion of each semi-lunar cartilage.

Anterior crucial ligament—origin, inner side of external condyle. *Insertion,* near the fore part of head of tibia.

Posterior crucial ligament—origin, outer side of internal condyle. *Insertion,* depression on back and external semi-lunar cartilage.

Semi-lunar cartilages, thick externally, thin internally; concave above, flat below. Their outer convex edges are attached to the lateral ligaments: their inner edges are free: the anterior and posterior extremities of each are attached to the head of the tibia. The outer cartilage is circular, the inner is oval.

TIBIO-FIBULAR ARTICULATIONS.

The head of the fibula is attached to the tibia by *anterior* and *posterior fibrous bands* and synovial membrane.

Interosseous membrane extends from one bone to the other, nearly the whole length.

The lower extremities of the tibia and fibula are connected together by anterior and posterior ligaments.

ARTICULATION OF THE ANCLE.

Bony formation, lower ends of tibia and fibula and astragulus.

Internal lateral ligament — origin, internal malleolus. *Insertion,* astragulus, naviculare and calcis.

External lateral ligaments are three; all take their *origin* from the external malleolus. *Insertion* of *anterior,* upper and outer part of astragulus. *Insertion* of *middle,* os calcis. *Insertion* of *posterior,* ridge on the back of astragulus.

Anterior ligament—origin, anterior edge of tibia. *Insertion,* upper and outer part of astragulus.

ARTICULATIONS OF THE TARSUS.

The astragulus and os calcis have two articular surfaces, covered by synovial membranes.

Interosseous ligament passes nearly perpendicularly from the groove which separates the inferior articular surfaces of the astragulus, to the corresponding groove in the os calcis.

Posterior ligament is attached to the posterior edges of the astragulus and os calcis.

The bones of the tarsus are connected on their dorsal and plantar aspects by numerous ligamentous bands.

Calcaneo-navicular ligament—origin, inferior surfaee of os calcis. *Insertion,* inferior surface of os naviculare.

Calcaneo-cuboid ligament — origin, posterior inferior part of os calcis. *Insertion,* under part of cuboid bone, and third and fourth metatarsal bones.

Synovial membranes line the several articulations of the tarsus.

TARSO-METATARSAL ARTICULATIONS.

These joints are secured by dorsal and plantar ligaments, and are lined by synovial membranes. The metatarsal bones are secured to the phalanges, and the phalanges to each other by lateral ligaments and synovial membranes.

ON REMOVING DEFORMITY SUCCEEDING BURNS.

To the Editor of the India Journal of Midical and Physical Science.

Sir,—In the 16th No. of the 2d volume of your Journal, a case of operation for "removing deformities succeeding burns of the arm and fore-arm," is detailed by Mr Roberts of Bangor.

Having had lately under my care three cases of a similar description, I beg to state the plan of operation I adopted, somewhat different to that of Mr. R's. and a mode of subsèquent treatment, which I am inclined to suppose better calculated to obviate this deformity.

The appearance which this deformity presents is, I believe, always the same,—a thin but deep bridle of integument connecting the arm and fore-arm, and forming at the elbow an angle more or less acute.—In performing the necessary opperation, little more seems to be required than a simple incision dividing the integuments fairly to the bend of the arm, and keeping up proper and continued extension,—such is the opinion of Dupuytren and others. Performing this operation by a single incision, cannot I am persuaded, remedy this deformity to any great extent, as it will be almost impossible to prevent the cicatrix from again contracting as the wound heals. In one instance this took place in a patient under my care: I however, subsequently adopted the operation I shall now detail: one which will be found to answer better than either of those proposed by Dupuytren or Mr. Roberts. It consists in making two incisions, so close to the arm and fore-arm as to include a portion of the normal integuments of both. An incision of this description, giving to the excised part a triangular form: a good deal of blood necessarily flows, but it is easily restrained by pressure. The advantages of this mode appears to be, that the arm is brought immediately to nearly its natural form, and the wound, while the healing process advances, is much less disposed to contract. Lint smeared with a little simple ointment to cover the raw surfaces is now used, and two fracture splints, on the arm and fore-arm, are to be applied with moderate pressure. I now come to that portion of the treatment on which depends the success of the operation. This consists in keeping up a proper degree of extension by suspending from the wrist, a weight of at first lbiss, and increasing the weight as the cure proceeds; at the same time binding at the wrist and top of the shoulder an elastic piece of bamboo band, drawing with a bandage the centre of it towards the bend of the arm: this is of much consequence, as it forms an antagonist power to the flexors, which the

patient, to receive temporary relief from the suspended weight, constantly throws into action.

Two cases which I treated in this manner, have succeeded quite to my satisfaction; one of them a robust jail prisoner, who received the injury eight years since, the other a delicate boy of fourteen years, whose deformity was of four years standing.

I am, Sir, yours truly,
T. Chapman, M. D.

Parneauh, January 11, 1836.

CASE OF TUBERCLES IN THE CEREBRUM, TERMINATING IN CHRONIC HYDROCEPHALUS,

By A. B. Webster,
Assistant-Surgeon.

We beg to call the particular attention of our readers to the following case of tubercles in the brain drawn up with great care, discrimination and talent by Dr. Webster.

The case is important inasmuch as it proves that the formation of tubercles in this instance proceeded from a constitutional affectation.

The distortion of the eyes and pendulous state of the eye-lids to which Dr. Webster alludes were in our opinion symptoms of the tubercular deposition in the brain.

M. J. W., aged 3½ years, a girl of rather delicate constitution, but sharp and intelligent. Had an attack of hooping-cough last autumn which formed well and from which she had a good recovery, after labouring under it for several months. About the end of March last, her relations began to observe an unusual expression in the eyes, which were dull, heavy and shining, with great distortion of the balls, and a falling down of the eyelids, or in other words, an inability to keep them permanently raised. The eyeballs were turned obliquely upwards towards the inner canthus, more particularly the right one, which continued throughout to show a more unnatural appearance than the left; with all this there was apparently no disturbance of the general health, so much so, that her relations, who were anxiously alive to the most trifling circumstance affecting it, did not think it necessary to consult their medical attendant, though sensible at the same time of the unnatural appearance of the eyes. Once or twice, during probably the space of a month, she complained of a pain in her head; but so slightly, and so transcient it seemed, that little attention was paid to it farther than ascribing it to rather a costive state of the bowels, and prescribing for it a gentle laxative. She took her meals as usual, and was in her customary good spirits; but it began to be observed that she slept longer than formerly during her afternoon sleep; that more coaxing was necessary to keep up her attention whilst repeating her lessons, and that during her sleep her eyelids were only *half shut*; matters continued in this state for about a month, when no change taking place for the better, but on the contrary the eyes becoming more distorted with *dilatation of the pupils*, and rather an increase of the drowsiness, her friends got alarmed, and about the beginning of May, they consulted their medical attendant.

On examining the child, and taking into consideration the symptoms that then showed themselves, viz., the distortion of the eyes, their dull, heavy appearance—the dilatation of the pupils, which, however, contracted readily enough on the application of a strong light—the pendulous state of the eyelids—the repugnance of the child in her ordinary movements to look towards the light—and the drowsiness—all these being unattended with any decided pain in the head—acceleration of the pulse or febrile disturbance of the system—he (the medical attendant) had suspected mischief to be going on in the head, and treated the case accordingly; leeches were applied to the forehead and temples and were repeated in a few days after; a blister was put on the nape of the neck and kept open by means of the ung. cantharid.; the head was shaved; the bowels repeatedly opened, and the strictest attention to quiet and regimen enjoined. These remedies were continued for 8 or 10 days, and were followed up by a course of calomel, 2 grains 4 times a day. This treatment was pursued for 10 or 12 days longer, by which time upwards of 100 grains of calomel had been taken, when it was deemed proper to intermit the whole for a short time (about a week) to observe the effects produced and to allow the system to rally a little.

A slight change for the better seemed to have taken place. The eyes were less turned up, the eyelids less pendulous, and the child declared she had no pain in the head.* This apparent amendment, however, only continued for a few days. She now began to complain decidedly and loudly of pain in the head, which came on in evident paroxysms, and for the first time was attended with crying. She slept almost constantly, and with the *eyelids half shut*, but when roused she was as completely sensible as at any time during her life. The eyes became more distorted, and it was remarked that the head was a little enlarged and unequal, particularly on one side (the left) behind the ear. The pulse was sharp and wirery, ranging between 120 when asleep to 140 when awake. It may again be here repeated that until the medical treatment was commenced, the pulse was nearly natural; there was no heat of skin, and her appetite was good. In fact, as before observed, there seemed to be no disturbance of the system till the remedies were used, or if there was any, further than the tendency to drowsiness, it was so slight as not to be observed by her relations and attendants.

From the aggravation of the symptoms above described, and all attendant circumstances, there seemed little doubt now of her disease being chronic hydrocephalus; and its treatment was resumed with still more energy than before. The calomel was repeated in the former quantities; a brisk purgative of jalap and rhubarb was given every morning; the issue in the neck was renewed, and a copious discharge from it kept up, and the tartar emetic ointment rubbed on the head twice a day till a moderate eruption of pustules was produced. With all this treatment, however, little, or if any, only transient benefit seemed to be derived. Some days the attendants fancied a change for the better had begun to take place, but the morrow dispelled all their hopes. The drowsiness, distortion of the eyes, and paroxysms of head-ache continued and soon changed into complete stupor; the pulse rising to 150 and 160 and irregular. In this state the child remained upwards of a month, taking all the time a moderate quantity of food (such as sago, arrowroot, &c.) till the system gradually and even imperceptibly giving way, she expired about the beginning of August.

During the whole progress of the disease, even from the commencement, it was remarked by the attendants and professional men, the large quantity of feculent matter brought away by the purgatives. It was incommensurate with the quantity of food taken into the system. Though the purgative was given every morning without intermission for upwards of a month, producing always two and sometimes three copious stools a day, yet at the end of that time, the quantity excreted daily continued undiminished, even up to within twelve or fourteen days of the child's death. Nor were the stools watery: the first was always thick and consistent, of a dark bilious colour, the others thinner and inclining to yellow. Convulsions of the arms and legs were frequent, though not severe during the last three weeks, and about this period there seemed to be a trifling degree of paralysis of the left side. Life in this child was peculiarly tenacious—so gradually and even imperceptibly did it ebb, that it continued to exist for a fortnight after mortification had attacked the integuments of the abdomen, neck and back.

An inspection of the head after death was permitted; but the object being only to satisfy the relatives as to the nature of the disease, by ascertaining the existence or otherwise of water in the ventricles, the dissection was necessarily hurried and superficial. On removing the skullcap, there were found strong adhesions between the dura mater and the posterior portion of the parietal bones, at which place the inner table was almost entirely absorbed, and presented the appearance of a piece of wood affected with dry rot; to this spot the child most generally pointed when asked as to the pain in the head. No separation of the sutures had taken place, but the skullcap was remarkably thin and diaphonous, and when it was removed, the dura mater under it seemed quite tinged as if distended with a large quantity of fluid in the ventricles, only between four and five oz. however were contained in them. The brain was firm, but the piamater and tunica arachnoides had no marked inflammatory appearance; on cutting off a portion of both hemispheres on a level with the fornix, several round tubercles, of the size of a pistol bullet, and of the colour and consistence of Dutch cheese, were imbedded in the substance of the brain.—

* This Child was so intelligent that we could rely on the correct description of its feelings.

There were about five or six of these tumours altogether; but there was one larger than the rest, about the size of a walnut, situated towards the base. On taking another slice off the hemispheres, there were observed two cavaties or sinuses, situated in the middle lobes of the cerebrum, one on each side of an extent capable of containing a moderate sized kidney bean. No trace of water or pus could be detected in them. Their walls were pulpy and softer than the rest of the brain; and so near the surface were they, that the outer wall of the one on the left side was not above the thickness of a shilling; in fact it might almost be said that the surrounding membranes formed the walls at this side. No communication with the lateral ventricles could be seen. The cavities of the chest and abdomen were not opened, as no peculiar morbid affection was effected to be found in them.

On reviewing the particulars of this case, there are several circumstances worthy of notice, and first as to the commencement of the disease. There is great reason to believe that the deposition of tubercular matter was the first stage; and that this was not attended with much vascular action in the head, is probable from the almost total absence of headache and of general disturbance of the system, even when the appearance of the eyes and drowsiness indicated that something unusual was the matter with the child. It is also not unlikely that these symptoms (distortion of the eyes and the drowsiness) were caused by the pressure of the tubercular masses on the brain rather than by the existence of water in the ventricles, which, it is more than probable, did not take place till a period very little anterior to the supervention of the stupor, or about the time when the pain in the head came on in paroxysms attended with crying. Could the formation of the tubercles have had any connexion with hereditary indisposition? Were they a constitutional or merely a local affection? The following circumstances give a probability to their being constitutional. The only brother (a year younger) of this child died six months before of a tubercular affection of the liver, accompanied with, or rather terminating in, effusion into the head. The liver was immensely enlarged, and studded with tubercles bearing a great resemblance to those in the brain of the girl. The misenteric glands were also slightly enlarged. The mother of these children, too, died within a few days of the boy, of tubercular consumption. The distortion of the eyes and the pendulous state of the eyelids were the symptoms that first presented themselves and attracted the notice of the attendants; the child in other respects seemingly being in her usual health, walking about and taking her food as if nothing was the matter with her. Is this the usual way in which hydrocephalus attacks, or may these symptoms more particularly indicate the commencement of the tubercular deposition in the brain? The two sinuses—How were they formed? Were they the seat of tubercles which had been softened down and absorbed, or were they regular abscesses, containing at one time pus which had been absorbed? Lastly, the quantity of feculent matter discharged from the bowels—Was this a feature of this peculiar disease, or was it the consequence of the use of the calomel?

CANINE PATHOLOGY.

To the Editor of the India Journal of Medical and Physical Science.

Dear Sir,—If canine pathology is not beyond the pale of the Medical and Physical Journal, so ably edited by yourself and copiously supplied with interesting matter, may I ask the favour of you, to give the following concise case a portion of your columns. It will be interesting to the sportsman, and I hope not less so to the physiologist. On the 1st September, 1835, I was asked by a lady to administer some relief to her favourite dog Rover, a large pointer, five years old, which she thought to be in a very hopeless condition. Being anxious to save the life of a sagacious and amiable creature, I inspected poor Rover, and found him suffering under the lank distemper, with an ulcer extending over the whole upper jaw, exposing the cartilages of the ear and threatening the eye; it was about a quarter of an inch deep, in a horrid sloughing state, with maggots. I even had some suspicion that the brain was not untouched. Before I tried any remedy I referred to Mr. Blaine's famous work on canine pathology, and found the treatment for lank distempers, but nothing which would serve the desperate condition of the ulcer. In the lank, canine distemper, the object of the veterinary surgeon is first to remove the visceral

obstruction: for which Mr. Blaine mentions remedies; these I did not think would answer Rover's case, and made trial of the sol. chlo. soda in ad. cinnamon, 30 drops of the former to an ℥; of the latter, ter. in die, ol. ricini ℥ ss., ordering the ulcer to be washed with brandy and water, and covered with cloth dipt in tinct. myrrh.

Sept. 2.—The oil has operated freely; he has taken the soda draught once in the evening; the dog is not so dull. Ulcer is cleaner, but there is still considerable sloughing. Directed the application of chalk and charcoal in fine powder, to continue tinct. myrrh; diet, a little meat boiled in rice.

3rd.—The ulcer is clean; the extent of the disease is now exposed. Tongue of a lead colour, indicating an accession of disease; nose dry—a bad symptom in dogs, according to Mr. Blaine; another dose ol. ricini was given and the soda draught continued; the edges of the ulcer touched with nitras argenti. It was impossible to keep on any plasters on account of struggling.

4th.—Rover is more cheerful: treatment continued; omit the tinct. myrrh, and dash salt water cold upon the ulcer, which is indolent.

6th.—The dog is thinner, and somewhat weaker; omit aq. cinnamon and sol. chlo. soda; tongue dirty; nose more moist; ulcer indolent.

℞. Pulv. jalap, gr. xv.
Potas supertar, gr. xxx.
Aq. menth pip. qs. M. ft. haust. stat. sumend.

7th. — Improvement: there seems healthy action in the ulcer; dash with salt water. Diet the same; more in quantity.

8th.—Much the same.

℞. Pulvis cinchon lancy, ℥jss.
Aq. fon. qs. x. M. ft. haust.
Stat. sumend.

With this treatment, and now and then a purgative, he has quite recovered.

Yours,
Sulkea, Feb. 1836. J. G.

GENERAL HOSPITAL.

To the Editor of the India Journal of Medical and Physical Science.

Dear Sir,—The accompanying cases of protracted labour, &c. in which the administration of the ergot of rye appeared to be followed by decided advantage, will probably be considered by you worthy of a place in your valuable periodical.

Yours truly,
WALTER RALEIGH.
March 9, 1836.

Case 1.—I was summoned in great haste by an European midwife to see the lady of a captain of a ship who had been brought to bed of a male child eight hours previously, and notwithstanding that the nurse had made every effort to remove the placenta, she had been unsuccessful in her attempts. A rather copious hœmorrhage had existed for a considerable time, the patient was perfectly pale from loss of blood, the skin cool, lips vivid, pulse scarcely perceptible at the wrist, and she frequently fainted.

On examination, I found the abdomen soft and distended, and that no contraction of the uterus had taken place. The usual cold applications, &c. were had recourse to: and ergot of rye ℥j. having been infused in ℥ ivss. of boiling water, one-third part of the infusion was administered as soon as prepared.

No change having taken place after twenty minutes, I repeated another third part of the mixture. In ten minutes after taking this second dose, uterine pains began to be felt. The muscular contraction soon became active, and with the assistance of gentle extension by the umbilical cord, the placenta was brought away, and the womb contracted firmly. Coagula continued to be cast off for two or three days, and the patient rapidly recovered.

Case 2.—I was called to see a young woman of about seventeen years of age, who had been thirty-six hours in labour: it was her first confinement, and the European nurse, although a skilful midwife, was in great alarm. The pains which had at first been severe and frequent, had for several hours entirely ceased; the patient was deadly pale and much exhausted, with a feeble pulse, and skin suffused with perspiration. On examination per vaginam, I found the os uteri dilated, the membranes protruding in a pointed form, and that the feet presented with the toes turned towards the pubis of the mother.

I instantly administered a scruple dose of the ergot of rye, which having no effect, after half an hour I repeated; this second dose seemed to occasion a slight return of uterine contraction, but as it was but in trifling degree, I gave a third scruple dose after a second half hour had

elapsed; in about fifteen minutes after which, vomiting ensued, followed by active uterine contraction, the membranes burst, and labour advanced unaided until the thighs of the child came fairly into the vagina, and admitted of a firm grasp, when I turned the child so as to bring its face towards the sacrum of the mother, after which the labour proceeded naturally, and the mother and child did well.

Case 3.—Occurred in a delicate young woman, the wife of an Assistant Apothecary at the General Hospital; she had been more than twenty-four hours in labour, and the pains, when I was called to her assistance by her mother, who is a midwife, had ceased; she was much exhausted and very faint. Examination indicated that the os uteri was fully dilated, but that the membranes had not ruptured; she took fifteen grains of ergot of rye with no effect. A second similar quantity was administered after twenty minutes, which in the course of a quarter of an hour was followed by vomiting, and strong uterine pains. The membranes gave way, and she was delivered within two hours after taking the first dose of rye.

Case 4.—The lady who was the subject of this case, was a friend of Mr. Foy, our very able Apothecary of the General Hospital. As he attended the patient throughout her indisposition, I requested him to draw up her case himself, a verbatim copy of which I now give. "An East Indian lady, of delicate habit, had been suffering thirty-six hours in her first labour; the membranes had broken, but the pains had been inefficient and sluggish, and during the past five hours entirely suspended; the patient was exhausted, irritable, and had distressing hiccup. Dr. Raleigh prescribed at this time fifteen grains of the ergot of rye, infused in water, every half hour. Two hours from the first administration of the medicine, and after she had taken three doses, the uterine pains became brisk and frequent, and delivery took place within three hours from the first dose of the remedy."

Case 5.—A patient of the General Hospital in her sixth confinement had been suffering for forty-eight hours from inefficient labour pains; the membranes had given way in the early stage, and the presentation was perfectly natural, but for the last four or five hours the pains had ceased, and the woman had become much exhausted; fifteen grains of the ergot of rye were prescribed in powder every half hour; after taking the third dose, vomiting was induced, the uterine pains became energetic and rapid, and delivery was speedily effected.

WALTER RALEIGH.

March 9, 1836.

GASTRO ENTERITES.

W. B., æt. 46, an old soldier, of haggard appearance, pale and contracted features, but of immense muscular and bony formation, is suffering from an old diarrhœa with a dull, heavy pain at scrobiculus cordis, a troublesome cough, unaccompanied by expectoration, a dry rigid skin, sleeplessness, loss of appetite and general weakness. Pulse is full, soft, and regular, tongue glossy, brick red, and moist, stools thin, light yellow mucus, and glairy, with small black or dark green morcels, as of boiled peas, and white particles like rice or curdled milk. No fullness to be felt in either hypochondre, but there is pain on pressure in the umbilical region, and on stretching the arms above the head, or making any exertion of the abdominal muscles. His most comfortable posture is on his right side or back with the knees drawn up. Percussion and auscultation discover to the observer's unpractised ear no appreciable lesion of lungs. The case in its general nature is one of every day occurrence, viz. a constitution naturally robust broken down by dissipation, abuse of spirits, and effects of climate. The state of the tongue, the character of the expectoration, the sound of the voice, the colour and appearance and smell of the stools are the only indications in the treatment.

During twenty-four days that he lived in Hospital, a variety of treatment was followed. From four to three and two leeches were applied daily for a time over the epigastre; blisters round the umbilicus; minute doses of calomel with digitalis and opium were given three or four times a day, and the bowels cleared by castor oil, &c. every day or two.

Emaciation however, proceeded; nothing like healthy secretion was procured; the tongue became varnished, nay polished, dry and bright like a carriage pannel, its colour a dingy brown. Bark was now tried in 5s. doses with 5 gr. of carbon. ammoniæ, and 5 of hyd. c. creta three times a day; and for a few days with good effect. Finally, recourse was had to the nitric acid and black drop, but in vain. In truth the case was all along a hopeless one.

On post mortem examination the whole mucous membrane of stomach and duodenum was found to be softened, the muscular coat white, firm, and much thickened like boiled tripe. Within the stomach, the mucus membrane at the cardiac extremity was thickly studded with minute red spots of petechiœ, in patches the size of a rupee; towards the pylorus, and along the duodenum it exhibited a uniform pink blush in streaks alternating with pale. The mesenteric glands were hard, cartilaginous white, with a drop of pus or tubercular matter in the centres. The omentum was a firm membrane opaque and thickened; it adhered firmly to the parieties of lower abdomen to the caput coli and the ilium. The whole of the lower bowels were glued together by coagulable lymph. Some discolouration and minute ulceration of the caput coli.

The liver was tolerably healthy, its upper surface adhered to the diaphragm from old inflammation. The gall bladder was very large and the ducts contracted.

Remarks.—No indications of intestinal disease are so little understood, as those of the tongue, yet none appear to merit so much study from their eminent importance. Even the French pathologists, who take the lead in researches of this sort, Andral, Martinet, and Rostan deal but in generalities in describing the morbid state of this organ. "La langue seche, indique la probabilité d'une phlegmasie de l'estomac on de l'intestine grele."—Martinet. And "cet etat de la langue annonce une irritation d'autant plus violante des organes gastriques, *pulmonaires* ou *autres*, que cette secheresse est plus prononceé."—Rostan. Andral says in conclusion of his observations. "Les mémes phénomenes revelent le plus ordinairement pendant la vie les alterations organiques de forme et de structure les plus differentes."

Do not remember any mention of this tongue by Dr. Abercrombie in conversation or in writing. Nowhere indeed do I find any mention of this *highly varnished dry brown* tongue, which I have seen repeatedly, and have heard Mr. Twining speak of, as indicating muco jejunal inflammation.

In the only two cases which I have had an opportunity of examining after death, there existed the petchial state of the mucus membrane of the stomach above described; the result apparently of low chronic inflammation in debilitated subjects and weakened vessels.

KREOSOTE.

There have been several cases of cutaneous disease in Hospital lately, furnishing an opportunity of trying the new German remedy the *Kreosote*, of which the following is a concise account:

This interesting substance, recently discovered by M. Reichenbach, in impure pyroligneous acid, has been applied with great success, both internally and externally, as a remedy for numerous diseases, particularly in obstinate cutaneous affections, recent wounds, ringworm, &c. and by inhaling in disease of the bronchia and lungs. The following directions for its employment will serve as a guide to the medical practitioner.

INTERNAL ADMINISTRATION.

In spitting of blood, catarrhal affections, and obstinate vomiting, in doses from two to six drops, three or four times a day, either of solution, (two drops being soluble in one ounce water,) or in the form of pills, mixed with liquorice-root powder and mucilage.

In affections of the bronchia and lungs it may be most advantageously applied by inhalation, for which purpose pour into an inhaler, capable of containing a quart, a pint and a half of water, at a temperature of 150 degrees, adding to it thirty or forty drops of the pure Kreosote, mix by agitation, and inhale the vapour through the tube.

EXTERNAL APPLICATION.

Kreosote may be employed externally, in three different forms, either pure, mixed with water, or united with simple cerate or lard, as an ointment. One dram of Kreosote, mixed with one pint of water, forms a lotion, which may be freely applied to recent burns or scalds, to chafed surfaces, and as for unhealthy ulcers, it may be applied undiluted to such parts as may require it, in the manner of a caustic; as an ointment, the usual proportion is thirty to forty drops to the ounce; in many cases it may be employed much stronger.

In Tooth-Ache, a drop introduced into the cavity, previously dried with a bit of cotton, will in most cases give immediate relief.

The employment of this substance in ringworm, and similar diseases of the skin, has been attended with the greatest possible advantage, some practitioners considering it a specific. The strength

to be employed in these cases must be regulated by the state of the eruption.

It may also be usefully employed undiluted, as an application to corns, warts, &c.; and also in solution, or diluted as an injection in leucorrhœa, gonorrhœa, &c.

It is highly important that this substance be employed in a state of purity, or entirely free from certain deleterious principles, naturally mixed with it in the compounds from which it is obtained.

M. Buchner, of Munich, recommends an alcoholic solution of krêosote, in the proportion of one dram to one ounce of alcohol, as an application to carious bones and teeth; and also proposes as the best mode of preparing krcosote water, to drop this alcocholic solution into distilled water, until it ceases to dissolve it, or becomes milky.

In three cases of adult ring-worm it seemed to do decided good; in two children it effected a speedy cure; in a case of caries tooth the relief from one drop was immediate and permanent; in a case of chronic rupia, and one of nerpetic scaly discase dependent on old constitutional derangement, it rather did harm. In an irritable and scrofulous ulcer it allayed irritation, and seemed to act sedatively like its powerful prototype, the hydrocyanic acid and lead lotion; upon the whole from the result of ten cases, I am disposed to think that this will prove a valuable addition to our Indian *médicinals*, where skin diseases are so numerous and troublesome; and it may sometimes succeed where all other known agents have failed. I should mention that the drug was kindly supplied to me for trial by Messrs. Bathgate and Co., and that Dr. Jackson is now engaged in attempting its very laborious and difficult preparation at the Company's Dispensary.

D. S.

CASE OF CONGENITAL CATARACT IN A YOUTH OF 18, RESTORED TO SIGHT BY OPERATION.

BY T. H. BRETT, ESQ.

Khundoo Pundit, native of Saugor, was born blind; his mother states that she had kept him in a dark room until the tenth day after her confinement, when on taking him to the door, and exposing his eyes to the light, she discovered the pearly appearance of the pupils peculiar to cataract, and that he has always been blind.

He is intelligent and cheerful, and has been in the habit of finding his way about Saugor, and the adjoining country, for many years, frequently singing, of which he is very fond. He had little or no inclination to undergo the operation, at least not sufficient to overcome the fear which he entertained. He could perceive the light, and had acquired the habit of rotating the head constantly in progression in a regular and curious manner, to the right and left, with a view, I imagine, of admitting the light to the retina, obliquely between the circumference of the cataract and the under edge of the iris. It was a long time before his relations could persuade him to submit to an operation.

He had requested to be taken to me some months previous, gratified at being told that he might be made to see like other people; but the slight inconvenience attending the introduction of a few drops of the solution of belladonna into the lids, and my holding the lids to try how they should be supported, annoyed him, and he said he would much sooner go home and eat his dinner. "What do I want with being restored to sight?" His mother likewise expressed her disbelief as to a person born blind being made to see. The principal Pundit of the Mohulea at length overruled the objections.

Appearance of the cataract. It was evidently entirely membranous, studded with a great number of pearly spots. The operation was performed on the 28th of August, with a delicate straight sharp double-edged needle, introduced in the usual position for cataract, and carried horizontally forward. Its substance, which was of very tough consistence, cut into two or three shreds, and left principally in the anterior chamber, without submitting the delicate organ to much irritation by too often repeated motions of the instrument. He complained of but little pain, and indeed there was scarcely any inflammation whatever produced by the operation. He immediately became conscious of a considerable increase of light.

The eye-balls, as in all cases of congenital cataract, moved about without any control, which together with a very prominent superior orbitar process, and much spasmodic action of the orbicularis, offered great apparent obstacles to the introduction of the needle, and it was quite im-

possible to use any speculum, or to support the lids at all, which would only have increased the irritation; I therefore find in all such cases it is better to introduce the needle without supporting the lids at all, which has an instantaneous effect in keeping the eye-ball steady. The operator can see sufficiently distinctly to direct the necessary movements of the needle. The native operators seldom hold the lids in any case.

So little irritation had occurred, that I operated this day, the 30th August, on the left eye, which resembled the former operation in every particular. No inflammation followed, but the right eye had become inflamed, in consequence of which his eyes remained bandaged for several days, and it became necessary to bleed him, and counter irritation was employed. He was purged with calomel and antimony, and leeches were once applied to the eye-brows.

He expressed himself as sensible of a remarkable change having taken place. The light was most distressing to him, and continued so for some time.

On the 8th day the absorption had proceeded very satisfactorily, several substances of various colours were presented to him. He could not recognize any of them until he had made himself acquainted with them by the sense of touch. He brought them very close to his eyes, moving his head in his accustomed peculiar manner. Whatever he attempted to reach, he always missed his aim at it. He expressed himself as highly gratified, and confident that he would see and know every thing, but did not like too much interrogation.

On the 12th day he came to me again. The eyeballs were no longer rolled about in their former vacant manner. He had acquired the power of directing the left eye, which had been most instructed, on objects. The right eye from inflammation, having remained bandaged. A lady showed him her shawl; he said it was red, which was correct, but did not know what it was, until examined by the hand. The platform in front of the house was recognized as green, and his mother said he had been examining many things at home. The absorption of the cataract had proceeded, leaving two-thirds of the pupils of the left eye quite clear; some inflammation still in the right. He said he was no longer afraid of me, and that he would submit to any thing I recommended.

On the 16th of September, he walked from the town to see me, accompanied by his mother. He had gained much information during his absence. The pupil of the left eye had become almost entirely clear. He said he had seen a great number of trees on the road, the lake, and a buggy passing by. He had now made himself acquainted with several things. What is this? A lota. This? A pawn leaf. Which answers were correct. A small hooka was shown him, he touched it, and was told what it was; several things were then presented to him, and the hooka was again brought. He observed, "I cannot tell; you have submitted so many things to me, that I am confused, and forget their names." He felt it, and then exclaimed it is the same hooka. Presently it was shown him a third time, he recognized it after having carefully viewed it from top to bottom without touching. He observed a book, remarking that it was red, a table, black and gold, but he knew not that it was a book until told so. It was presented to him a few minutes afterwards, and he recognized both the colour and the book. He said he was extremely happy, and gratified with all he saw. He followed me with his eyes as I moved about the room, and pointed out the different positions I took. He recognized distinctly the features of his mother's face. She hid it under her chudder, he laughed, and observed that she had done so, and turned his face away. He said I can see every thing; all I want more, is time to learn what they all are, and when I can walk about the town, I shall be quite satisfied. He could not ascertain whether any thing was round or square, smooth or rough. He distinguished the following: some partridges, the cage, and the cup containing the water. The colour of their plumage he correctly stated, also the windows, the fields, the sky, a child in arms, &c.

On the 17th he again came to see me. He pointed out every feature in his mother's face; her hair, the colour of her dress, the different distances and positions which she purposely took, and when changing places with another woman, selected her out. He stated, that if I would bring the red book I showed him yesterday, he would recognize it. I accordingly brought him a red morocco box, much resembling the book, but smaller: he said it was the book!

From this period I quitted Saugor, and have heard nothing further of him.

T. H. B.

THE

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXIV.

GENERAL OBSERVATIONS.

Scope and Utility of the Theory of Medicine—Manners and Feelings proper for studying it—History and progressive Advancement—Plan adopted in these Lectures—Order in which the different Topics should be treated—Physiological Circle of Hippocrates—Remarks by Dr. Hunter—Necessity of Simplicity and Precision—Irritability and its Stimuli—Organic and Animal Functions—Respiration and Sensation—Pathology—Etiology, and its Subdivisions—Semeiology—Diseased Alterations in Organs—Diseased Alterations in Functions—Therapeutics—Diet, Regimen, Medicines, and Surgery—Elementary Physiology—Apparatus subservient to the different Functions—Comparative Anatomy—Utility of Illustrations, Specimens, Preparations, and Diagrams—Etiology—Difference between predisposing, exciting, and proximate Causes of Disease—Difference between a proximate Cause and the Disease itself—Pneumonia, Apoplexy, and Angina Pectoris—Galen's stupid Definition, stupidly copied by Gregory—Error of Dr. Paris—Example of an internal exciting Cause—Predisposing Causes—Period of Life—Infancy, Boyhood, Adolescence, Maturity, and Senescence; and the Diseases to which they are liable—Cause of congenital Cataract—Specific Contagions—Superior Longevity of old Women—Greater Uselessness of old Men—Cullen's Theory of increased Determination of Blood at different Ages—His erroneous Views on Hæmorrhage—Temperament—Ancient and Modern Divisions—Sanguine, choleric, melancholic, and phlegmatic Temperaments—Athletic, nervous, moist, and dry Temperaments—Cephali, thoracic, and abdominal Temperaments—Examples—Charles Fox, Sir John Leslie, Lord Jeffrey, Lord Brougham, Dr. Birkbeck, a London Alderman, a Prize Fighter, a Naval Captain, Don Quixote, and a Wesleyan Minister—Characteristics of the different Temperaments; and the Diseases to which they predispose—Description of the lowest Grade of Humanity—Difference between Temperament and Idiosyncracy.

Having made these observations upon the scope and utility of the theory of medicine, upon the manner of conducting that study, and upon the feelings by which those engaged in it should be actuated, I proceed now to describe, as shortly as possible, the general plan which I adopt in these lectures. I have already said how important it is, that persons engaged in the pursuit of any science, should have some knowledge of its history and progressive advancement; but it does not follow that the account of this advancement should precede, (as by many lecturers on all branches of philosophy it is made to do) the account of the things themselves. If the facts of a science cannot be well understood, without frequent reference to those who have established them, and of whom our hearers probably know nothing; neither can the merits of the improvers of the science be duly appreciated, without frequent reference to facts, of which probably they are equally ignorant. But in which case are we required to suppose the least:—in treating of the facts of a science before its history, or in treating of the history of a science before its facts? Unquestionably in the former; and therefore I must consider the common practice of prefacing a course of lectures with a history of the science to be treated of, as one "more honoured in the breach than the ob-

servance." If a general history of the science be delivered any where, I conceive it is more useful at the close, than at the beginning of such a course; more especially as the facts of a science, being of greater importance than its history, should have appropriated to them that period at which the energies of our hearers are most fresh and vigorous. I am in the habit, therefore, of plunging at once *in medias res;* but to determine in what order these should be treated of, is a matter of very considerable doubt and difficulty. With regard to elementary physiology, it was a remark of Hippocrates, which has been very frequently repeated, that every process going on in the living body, constitutes a portion of a circle which has neither beginning nor end; and in describing which we may set off almost where we please. In this respect it is quite impossible to do wrong; but, for the same reason, it is quite impossible to do right. "Wherever we begin," says Dr. Hunter, "we find that there is something preceding which we ought to have known. If we begin with the brain and nerves, for example, we shall find that these cannot exist, even in idea, without the heart; and if we set out with the heart and vascular system, we shall presently be sensible that the brain and nerves must be supposed. Or should we take up the mouth, and follow the course of the aliment, we should see that the very first organ that presented itself supposed the existence both of the heart and brain."

In treating of a science, then, where so perfect a *carte blanche* is offered to us with respect to arrangement, it appears to me the best plan, as being most conducive to simplicity and precision (which are the only legitimate objects of arrangement of any kind), to begin with the consideration of irritability; or that property which especially distinguishes living matter from dead; and of those stimuli, from the action of which on the irritability of the several organs of the body, all the functions of living animals directly or indirectly result. In prosecuting these several functions, I think it best to treat first of those which appear to imply the possession of irritability alone, and to be more or less common to all living beings, such as respiration, and the other functions commonly called organic; and afterwards to treat of those which seem to imply the possession of other properties superadded to irritability, and to be more or less proper to the higher classes of living beings, such as sensation, and the rest of those commonly distinguished by the name of animal.

Such, then, is the general arrangement which I follow in treating of elementary physiology, and which I prefer to innumerable other plans, which, if not more perfect, are certainly by far more complicated. With regard to etiology, I see no good reason for deserting the established division of the causes of diseases into predisposing, exciting, and proximate. Under these respective heads, therefore, I shall treat of the influence, first, of all those permanent conditions of the body, and of all those accidental variations of circumstances affecting it, from which morbid changes result; and afterwards of all those morbid changes themselves which more immediately give rise to diseases. In treating of semiology, I shall endeavour to explain, in the first place, the changes effected by disease in the aspect of the various organs of the body, and their secretions; and, secondly, the changes effected in the various functions; following up these in the same order, as they were described in the state of health. Lastly, in treating of therapeutics, I shall follow the old division of remedies, into those referable to diet and regimen, to medicine, and to surgery; and shall investigate the influence, under each of these heads successively, of all those curative agents of which we avail ourselves in the treatment of diseases.

With respect to elementary physiology, although I take it for granted that my hearers in general are acquainted with all the broader facts of anatomy, I shall not allow myself to be so far misled by this idea, as to omit prefacing the account of every function with a slight description of the apparatus immediately subservient to it; and this, not in the human body alone, but in that of the lower animals also; since it is obviously impossible that we can reason fully or justly on the functions of any organ in the human body without some knowledge of the structure of the corresponding organs in the inferior animals, and of the means by which the same function is performed in them. It is only by proceeding in this way, from things simple to things complicated, that we can be made to understand what parts are essential to each function in man, and what are merely supernumerary; and can escape many false conclusions into which a more circumscribed view of the matter would necessarily lead us. At the same

time, I am perfectly aware how useless it is to be continually harping upon the mere names of such animals, and describing their organs and functions, while perhaps the majority of our hearers are hardly conscious of their existence, and know absolutely nothing of their nature. In order as far as possible to remedy this evil, I generally present a rough diagram, as well as give a short description, of those parts in the lower animal to which I have occasion more particularly to allude; and under the same conviction of the greater impression always made when the images of the things talked about are presented to the senses, I endeavour to illustrate, in the same way, every subject of human physiology, as it successively comes before us. Of the diagrams, for instance, which relate to the function of respiration, the first parcel is intended to illustrate the respiratory process in the invertebral animals, according as they breathe by gills, bladders, or tubes. The second set contains those which illustrate the same process in fishes, reptiles, and birds; and the third and fourth, those illustrative of the same process in the mammalia, and especially in man. The several subjects connected with pathology and therapeutics are less susceptible of this kind of illustration than those of elementary physiology; but it will, in the same degree, become less necessary; for if we thoroughly understand the functions of the healthy body, there will be little difficulty in following up all the changes induced in it by disease; and in understanding how it is liable to be affected by the various agents by which either diseases are occasioned, on the one hand, or health is restored, on the other.

ETIOLOGY.

The causes of disease are divided into three classes:—1. Predisposing. 2. Exciting. 3. Proximate. A predisposing cause consists of a permanent condition of the body, not sufficient of itself to cause disease; but which becomes sufficient when conjoined with an exciting cause. An exciting cause is some accidental variation of circumstances. The proximate cause is some morbid change in the functions of the body. Dr. Brown said that health and disease were the same condition; varying only in the degree of excitement. Two conditions are necesary for both; a stimulus to act, and a susceptibility of being acted upon. The irratibility of an organ, and a stimulus acting upon it, gives rise to a series of motions; and the result is a function. A morbid irratibility and stimulus are the predisposing and exciting causes; giving rise to a morbid series of actions, (the proximate cause), of which the result is diseased function, or a disease.

Many deny the existence of any proximate cause; for they consider it identical with the disease itself. But the disease is always obvious, while the proximate cause is often obscure; and therefore they cannot be identical. Pneumonia is a series of symptoms, of which the proximate cause is inflammation of the lungs. A person may recognize pneumonia again, though he may know nothing of the lungs. It is the same with apoplexy and other diseases. We can tell angina pectoris, for instance, though we do not know its cause. Galen gave a stupid definition of an exciting cause, which has been copied by succeeding authors, down to the time of Gregory. It implied that between the exciting cause and the disease there was an essential connection, but not causation. It has also been incorrectly said by Dr. Paris, that being coexistent with the disease, it cannot be its cause; and by others that being part of the disease, it cannot be its cause. Predisposing causes are always internal; exciting causes may be either internal or external. Sleep which, in excess, produces disease is an example of an internal exciting cause.

Predisposing causes.—These consist principally of peculiarities in the irritability of different organs of the body, in certain conditions.

1. Period of life.—The age of man has been divided into five periods:—1. Infancy; extending from birth to seven years. 2. Boyhood; extending from seven years to sixteen. 3. Adolescence; from sixteen to twenty-five. 4. Adult Age; from twenty-five to fifty. 5. Old Age; from fifty to death. The two last are each subdivided into three periods. 1. Commencement. 2. Maturity. 3. Decline.

In childhood, the head is thought to be most liable to disease; in adult age, the lungs; in old age, the abdomen. In the two former, the predisposition may be owing to increased irratibility, from the great supply of arterial blood; but in old age it is from nervous plethora, and depends, not on increased irritability of the capillaries, but on an increased stimulus.

(1.) Infants are liable to purulent ophthalmia, rubeola, scarletina, variola, vari-

cella, frambesia, and pertussis. These arise from specific contagions; and therefore age is not properly a predisposing cause to them. They are also liable to tabes mesenterica, diarrhœa, parulis, aphtha, strophulus, pityriasis, erysipelas, arachnitis, hydrocephalus, rachitis, hydrorachitis, epilepsy, and trisurus. Of these, gastro-enteritis is the exciting cause. A third class of diseases to which infants are liable, includes cynanche trachealis, bronchitis, intus-susception, prolapsus ani, inguinal and umbilical hernia, scleroma, and polysareia. Congenital cataract is rather defective organization than a disease; for the lens is always opake before it is transparent; and it becomes transparent as its density increases.

(2.) Children are liable to many of those diseases to which infants are subject; and, in addition to tubercles, encephaloid tumours, morus, otitis, cynanche tonsillaris, choræa, epistuæis, and urinary caculi. Morbus coxarius, white swelling, and psoas abcess are included in tubercles.

(3.) Adolescence is liable to consumption, distortion of the spine, disease of the hip, &c.

(4.) Adults are more exposed to fevers, rheumatism, mania, dyspepsia, inflammation of the lungs and liver, tetanus, &c.

(5.) Old age is subject to apoplexy, gout, diseases of the genito-urinary organs, scirrhus of all the organs, hypochondriacism, diseases of the heart and blood-vessels, hæmorrhoids, &c. Old women retain their strength longer than old men, the former being intended by nature to wait upon the latter; and we should therefore rather speak of an "old man" as useless, than of an "old woman." Women likewise live longer than men.

Many diseases are put down to age as a predisposing cause of which it cannot properly be considered a cause at all. We are liable to them only from being in certain situations; and if in those situations we should contract them at any age. Instead, therefore, of a particular age being a predisposing cause of them, we are more exposed to the exciting cause of them at that particular age.

Predisposing causes are generally explained on the principle of increased determination of blood. Hence, according to Cullen, hæmorrhage takes place from different parts of the body, in different periods of life; from the nose in childhood, the chest in maturity, and the anus in senescence. His theory is improbable, hypothetical, gross, and mechanical. He struck a balance between the pulmonary and aortal systems; and attributed all pulmonary diseases to the pulmonary system of blood-vessels. Hæmoptyis, however, takes place not from the pulmonary but from the bronchial vessels; and therefore from the aortal system, which Cullen denied.

II. Temperament. Temperaments were anciently divided into four:—1. Sanguine; from the supposed predominance of blood. 2. Choleric; from predominance of yellow bile. 3. Melancholic; from predominance of black bile. 4. Phlegmatic; from predominance of mucus. This arrangement, it will be seen, is founded on the supposed predominance of different fluids; but another is founded on the supposed predominance of different tissues. 1. Sanguineous; where the vascular tissue predominates. 2. Lymphatic; where the absorbent tissue predominates. 3. Athletic; where the muscular tissue predominates. 4. Nervous; where the nervous tissue predominates. 5. Moist; where the fluids predominate. 6. Dry; where the solids prevail. The French adopt this mode. Another, founded on the predominance of regions, was introduced by Thomas. 1. Cephalic. 2. Thoracic. 3. Abdominal. These may be variously combined. Charles Fox and Sir John Leslie may be mentioned as good examples of the combination of the cephalic and the abdominal. Jeffrey, of the Edinburgh Review (now Lord Jeffrey,) is an example of the union of the cephalic and the thoracic; for he is good at athletic exercises. An alderman is an example of the abdominal temperament, and a prize fighter of the thoracic.*

It is seldom that any person has one of these temperaments unmixed. A near approach to either renders him liable to particular diseases.

1. Sanguine.—If well marked, this temperament degenerates into scrofula. It is characterized by soft and yellow hair, blue eyes red cheeks, large veins, swelling lips, slender body, soft and clear skin, and a person altogether agreeable. The mind is active, but does not retain long the impressions received. Persons of this temperament are liable to the de-

* We should be disposed to mention Lord Brougham and Dr. Birkbeck as excellent examples of the cephalic temperament of this arrangement, and of the nervous temperament of the preceding.

position of soft tissues, such as melanosis, and to acute diseases of all kinds; which, however, are in general not obstinate.

2. Choleric.—This temperament is well exemplified in the captain of a Leith smack. The hair is red and crisp; the eyes are small and shining; the cheeks orange-coloured; the skin hard; the body square; the legs standing widely apart; and the temper irascible. It predisposes to diseases of the heart and of the liver, to aneurisms, &c.

3. Melancholic.—Well seen in Don Quixote, and a Methodist preacher. The hair is long, smooth, and straight; the eyes dark; the face long, and of a tawny colour. The body is hard, and without fat. The mind is slow, but the memory tenacious. The diseases to which this temperament predisposes are melancholia, dyspepsia, schirrus, ossification, and all those which depend on the general prevalence of hard tissues.

4. Phlegmatic.—This temperament characterizes the lowest grade of humanity. The hair is long, moist, and hanging down. The eyes are dull, and the lips thick. The face is tumid and œdematous; the skin pale and flaccid; the abdomen protuberant; the whole body large and ill-shaped; and the mind torpid. The unfortunate subjects of this temperament are liable to chronic ulcers, and to various forms of dropsy.

5. Idiosyncracy.—This is allied to temperament. It is said by the French to be owing to the preponderance of partial tissues; such as the mucous, serous, or fibrous; whereas temperament is owing to the preponderance of universal tissues. Idiosyncracy, according to this view, is a partial temperament, while temperament is a general idiosyncracy.

LECTURES ON SURGERY,

BY

JOHN HUNTER, F.R.S.

DIGESTION.

Animalization begins in the stomach, and in common language is called digestion, the immediate produce of which is called chyle. In the change of food into chyle we do not see why it may not have received the living principle, for the change is such as renders it capable of becoming alive. But it may be supposed that this process is reserved for the lungs, where the chyle is so much exposed to the air: the air may be imagined to act on it like heat on an egg, or moisture and warmth on seeds, giving a power of growth to their particles. In these cases, however, it is not the principle of life which they give; they only give life its action.

Again, blood may be supposed not to become alive till it be made into a solid, when it becomes part of our body, and loses the property of blood, and there its life is indisputable; but I am apt to believe that the living principle takes place sooner, which I imagine will appear in investigating the properties of the blood, with the many phenomena that attend it in the living body.

I have already observed that the organization of animal matter is not necessary for life, only for its actions; therefore fluidity is no objection to the blood being alive. My reasons for supposing the blood to be alive in a fluid state are the following: 1. It may be observed that it appears to carry life to every part of the body, for whenever the whole or a part is deprived of fresh blood it very soon dies. This blood, however, must be such as has undergone some change in the lungs; for if the blood did not undergo this change it would probably soon die, therefore would not be capable of keeping up the living principle in other parts. This effect arising from the want of fresh blood is so evident that it needs no illustration; I may therefore conclude that it is the only cause and support of life, the nerves having no other part in it but to produce some of the actions,—not life itself, for without this support the nerves themselves die. 2. We may observe that whilst circulating, or in useful motion, it is always found in a fluid state. Hence I think I may be allowed to say, as it is never found in a solid form in the cavity of the blood-vessels, that it has not the least tendency to become solid; that such a state is contrary to its nature. This must arise from some principle which is probably both in the blood and the vessel. The want of disposition to coagulate whilst moving in the living vessel does not arise from the motion, for in many places where the motion is extremely slow the blood remains fluid. We have instances of this in the veins of the leg, where the crural artery has been tied, in which case the blood only moves through a few small

collateral branches below, and back again by the larger veins. Now, a small quantity of blood being sent into these larger vessels, the motion in them must be next to stagnation; yet, while there is any degree of motion, the irritation of imperfection is not given; there is consciousness of its being an useful part; by which is meant that the harmony between the solids and fluids is kept up. It is often curious to see the small quantity of motion which will keep up this mutual harmony. In cases where people have been days, or even weeks, in trances, where there is not the least perceptible motion in the blood, it has retained its fluidity, because both solids and fluids retained their life, though not their actions. The want of disposition to coagulate in such situations does not arise from any property in the blood simply as animal matter, for simply as animal matter, whose alterations arise out of its composition, as fermentation, it would not vary in its effects from circumstances that do not in the least alter the nature of the compound.

Dead animal matter acts on the living body as any other foreign or extraneous matter; therefore, the blood being in perfect harmony with the living principles of the solids when both are in perfect health, is a presumption that the blood is alive. However, this argument is not conclusive, for we find heterogeneous parts in the blood, which do not destroy this harmony; most probably those heterogeneous bodies are introduced simply as stimulants to the living principle, as extraneous objects are to the sensitive.

This harmony of the blood with the solids is more observable in some parts than others. The parts with which it is in the greatest harmony are the vessels; this is evident from its retaining its fluidity longer in contact with them without motion than in any other part of the body, though equally enclosed in living parts.

All the diseases which act on the solids act on the blood, causing it to effect those changes which arise spontaneously from rest out of the body; so that blood is as capable of diseased *actions* as the solids are. If the blood did not change in the diseased states of the solids, it would lose the natural harmony I have been speaking of. This change is according to the state of the solids, which shows the intimate connexion between the two; it is not a primary diseased alteration of the fluids, but a consent with the diseased disposition of the solids.

On the other hand, the solids are affected by diseases of the blood: I even suspect death in the blood can take place independently of the solids; but the death of the solids will soon follow.

The blood when at rest has a disposition to separate into several parts, viz. coagulable lymph, red particles, and serum; the red part being retained in the coagulable matter, and the serum squeezed out in the act of coagulation. This disposition in one of the parts to coagulate when at rest, from whence the above changes are produced, is more or less strong, according to circumstances.

This property of the blood deserves particular attention, as it throws more light on its nature than any point of view in which it can be considered, it being spontaneous and natural. It is by this change that the solids are formed, and it seems to me so important that I think it almost the only thing necessary to be considered more fully; indeed the power of coagulation in the blood throws so much light on the nature of a disease, so far as the blood is concerned, that it is almost the only part we have recourse to in the examination of the blood after bleeding, when we look to see whether or not the blood is buffy, that is, whether there has been a disposition for the red globules to sink faster in such blood; or rather, perhaps, that from such blood being longer in coagulating, the red globules have time to sink to the bottom, and leave the coagulable lymph atop free from red globules, and this causes the buff of the blood. It is by this coagulation also that we perceive whether the blood is cupped or not, that is, whether the coagulum draws together and its edges rise; and then we say that the blood is not only inflammatory, but highly so, showing great strength in the constitution: if, on the other hand, it lies flat in the cup, and makes an even uniform surface, we know it is rather loose in its texure, although it may be still buffy, which shows that the powers of the constitution are weak.

The red globules abstracted, or the red blood abstracted from the other parts, need scarcely be considered, as they hardly explain any thing.

The serum also explains but very little; there may be more or less of it than common, but in itself it explains very little.

The power of coagulating in the blood

is greater when out of the circulation and exposed to common air, even more than when extravasated in some cavities of the body, the necessity or use of which is evident, for by this it becomes more effectual in stopping extravasation. A striking instance of this kind happened in the crural artery of a boar. I cut it through and allowed it to bleed; but before the animal became weak, or, at least, had the appearance of weakness, the bleeding became less and less, till at last it stopped. On examining the artery, it was found to have a quantity of coagulated blood opposing and surrounding its cut end like a mop, through which the blood could not pass.

This power of coagulation, especially when exposed, enables the blood to unite external wounds more readily, and of course preserves the living principle better, and keeps the internal parts from exposure in many wounds which otherwise would become external; by this means they are united by the first intention.

In all inflammatory dispositions in the solids, whether general or local, the blood has an increased disposition to separate into its component parts, the red globules become less uniformly diffused, and their attraction to one another becomes stronger, so that the blood when out of the vessels soon becomes cloudy or muddy, and dusky in its colour, and when spread over any surface it appears mottled, the red blood attracting itself and forming spots of red. This is so evident in many cases that it is hardly necessary to wait till the whole coagulates to form a judgment of it. I think I can say when the blood is coming from the vessel, by its appearance in the stream, whether it will be sizy or not. When the blood has not an inflammatory disposition, the stream has a degree of uniformity and transparency in its appearance: but it is only an eye accustomed to it that can make this distinction.

If the inflammatory disposition of the solids arises from fever, this disposition in the blood is universal. If there is universal inflammatory disposition from some local irritation, the blood is still universally affected. But if the inflammation is local, and the constitution is not affected, the disposition in the blood is not universal: how far there is local inflammatory disposition of the blood I do not know, but there is reason, however, to suspect it, from the ready union of parts under inflammation. If the blood does become inflamed in passing through an inflamed part, we must suppose that it immediately loses that disposition when it meets with parts in perfect health.

These properties, namely, increased disposition to separate, and a disposition to become a firmer solid, always show increased disposition for action in the living principle, and also, most probably, increased power. It is one of the signs of strength of the living powers, although the materials for action are weak.

The use of this change in the blood is evident, since it is made fitter for uniting parts by this means; and it is from this disposition that the blood retains its living principle sufficiently long till union takes place. Unless the stimulus of necessity for coagulation is given by the solids, the extravasated blood will not coagulate, it will only act as an extraneous body, which often happens where union is unnecessary, improper, or hurtful, as in cases of contusions, where the blood remains fluid in the cellular membrane.

This disposition to coagulate when out of the vessels, or when retained in them without motion till the consciousness of the use of motion, and of course fluidity, is lost, is one of the effects of the life of the blood.

I have used the word *consciousness* because we have no language suitable to all my views of the animal œconomy, and to coin words would not answer the purpose, because then I must have a dictionary of my own. I have not a word for expressing the cause of those actions which take place in the body, as if it was conscious that such and such things were going to take place. There are actions in the body which come the nearest to consciousness of the mind of any thing that I can conceive, and therefore I make use of this word; but it is commonly applied by philosophers only to the mind.

Coagulation is a species of attraction arising out of this irritation. It may be considered as a species of generation, for it is the first action or establishment of a power of action within itself, so as to form itself into muscular fibres, the only powers in an animal: these, again, with other parts, form organs to act on the materials from which they arose, for their own support.

I will relate a case in proof of most of the arguments which I have employed respecting the life of the blood. It is one of many.

A man came to St. George s Hospital who had a hydrocele, for which he was tapped with a lancet. The water was clear serum: when this was evacuated, the testicle to the feel was found to be larger than natural. About a month after, the tunica vaginalis became as full as before: the radical cure was now determined on, the tunica vaginalis was slit up its whole length, and the fluid, which was now bloody, was evacuated. The testicle, on being exposed, was found larger than natural, and was extracted. On the body of the testicle, and nearly in the direction of its long axis, and opposite to the orifice in the sac made by the lancet when the water was first evacuated, lay a coagulum of blood, dark in colour, almost like a leech, when that animal is shortened, about two inches long, and of the thickness of a common-sized little finger. In the angles between the epididymis and body of the testicle lay another coagulum, adhering in some places to the epididymis, in other parts loose to the body: it was attached only at one end. The adhesions of the large coagulum to the body of the testicle were firm, although it would admit of separation. This was made at one end, when fibres were plainly seen running from the testicle to the coagulum. The adhesion of the small coagulum was in many parts still firmer. All over the tunica vaginalis there were a great many vessels full of blood, and in many parts coagula of blood like extravasation. In this state I had a drawing made of it, and a small part magnified, to show the vessels and the dots of extravasation as they then appeared. By being put into water all these vessels and dots disappeared, and the parts became white. I then injected the testicle by the spermatic artery, which succeeded extremely well. On examining the part, I observed the following appearances. The surface of the testicle and tunica vaginalis had resumed the former appearance, only with this difference, that the injection was of a lighter red than the blood to the naked eye, and much more so to a small magnifier. The vessels on the surface were very distinct, and the dots, where the extravasation of injection was as if there had been extravasation of blood. The coagulum on the tunica vaginalis now appeared vascular; the surface of the adhesion, for about one twentieth of an inch, was injected and extremely full of distinct vessels. The smaller coagulum was injected in many places through and through its whole substance, in the other only for a little way.

If it should be asked, how came those coagula there? The answer is, the blood from the wound made by the lancet in the tunica vaginalis passed into the cavity, and then coagulated on the testicle directly opposite to the wound, and a small quantity of the blood which got to down the chink between the testis and epididymis coagulated there also. That this is the most probable way of accounting for it is, I think, strengthened by another case, where the tunica vaginalis was found adhering to the testicle, when performing the radical cure, at the very part where he had before been tapped. In half a year probably this coagulum would have become wholly vascular, and probably in a little longer time the whole would have been taken away; because, being vascular, it would have had absorbents, which would have taken it all, as a useless part, into the constitution.

The tunica vaginalis filling again so rapidly in this case was perhaps the reason why it did not adhere to the coagulum on the other side, so as to produce a union between the two parts.

Quære, For what purpose did this coagulum become vascular? for no visible purpose could be answered by it, as absorption, we may suppose, might have taken place as easily in a coagulum as in the cellular membrane. But perhaps absorption not going on here was the cause of the collection of water; and adhesive inflammation evidently took place here that it might be able to absorb itself.

Thus, then, the materials of which the blood is composed are joined with the living principle: in consequence of which the blood, if properly disposed, is capable, when extravasated, of forming itself spontaneously into parts fit for motion, and for performing all the offices of any part of the living whole, successively receiving the stimulus of nature from the surrounding parts to form itself into a similar part, as bone, cartilage, &c.

In many diseases not inflammatory, namely, those called putrid, where the solids have a tendency to fall into those changes natural to animal matter deprived of its preserving principle, the blood has no disposition to coagulate, nor the solids any power of raising inflammation, both having taken on the same disposition. In such a disease both the principle and power are diminished, so that

life is hardly able to preserve the matter from falling into its natural changes, though it his still a disposition to keep the vital parts or body moving.

Many kinds of death as well as putrid diseases produce this effect on the blood; an instance of which was met with in a gentleman, who being in perfect health, died instantaneously from passion, this having been so violent as to produce death in every part at once, and his blood did not coagulate.

A healthy woman was taken in labour of her fourth child. As the child was coming into the world the woman died almost instantly. On opening the body next day, there appeared no cause for death whatever, every part being natural and sound; but the blood was in a fluid state, nor did it coagulate on being exposed.

A soldier, a healthy young man, confined for desertion, received a blow on the pit of his stomach from one of his comrades, from which he dropped down and died almost instantly. On opening the body, no preternatural appearance was observed, but the blood was in a perfectly fluid state, and did not coagulate when taken out of the vessels and exposed a considerable time.

In animals struck dead by lightning the blood does not coagulate nor the muscles contract, both being killed at once.

There are other instances. Two deer were hunted to death. On opening them the blood was fluid, only a little thickened, and the muscles were not rigid, as we find them, where they are capable of acting, from the stimulus of death. In both cases the life of the solids and of the blood was destroyed at the same time and at once.

The observation that animals hunted to death are tenderer than those killed by other means is not uncommon.

There is a natural action of the living body which destroys the life of the blood in the act of extravasation; this is the discharge of the menses in women. If that discharge is natural and healthy, the blood does not coagulate; but, on the other hand, if the extravasation is not a healthy one, the blood coagulates as it is extravasated, and comes away in clots. This perhaps is best demonstrated in cases where the hymen is imperforate and the menses are accumulated. This observation leads us to understand something of the nature of the menses; for depend on it, where a woman has her menses come away in clots, it is not a natural but a diseased discharge.*

To prove that the blood and the solids correspond very much in their actions of death, we shall only generally observe, that when an animal dies in the common way, it is by the vital actions being first destroyed; but life still exists, for the muscles contract and the blood coagulates. But if we destroy life instantaneously, or along with the vital actions, then the muscles will not act, and the blood will remain fluid.

These changes in the blood, which appear spontaneous, are not really so; they arise from irritation in the blood itself as much as any actions in the solids. This irritation excites the natural action of the blood, which produces these effects and all the properties we see the blood possesses in either a healthy or diseased state.

We cannot suppose the blood has a power of communicating sensations, as it cannot have nerves; its living powers are therefore those of simple life, and it is similar in that respect to the solids of many animals.

As sensation is a principle superadded, and intended to convey fixed intelligence it is unnecessary for a moving part to have it; but when it becomes a fixed and solid part it opens a communication with the mind.

Thus far I have endeavoured to show that the blood is as much endued with life as the solids are; and the only difference between the two is that the solids have construction, called organization, producing considerable visible effects, while the blood, not having this construction, does not produce these visible effects. The truth of this theory will appear more evident in treating of the diseases of the animal body.

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* It is now the universal opinion of physiologists, that the menstrual fluid is a secretion, neither venous or arterial blood, and does not coagulate in its normal condition. The uterus is congested before and during menstruation, and on concussion may discharge blood with the menstrual fluid. This is a disease as stated in the text. —Ed.

AN ADDRESS

DELIVERED TO THE MEMBERS OF THE

WORCESTERSHIRE NATURAL HISTORY SOCIETY,

ON THE OPENING OF THE

WORCESTERSHIRE MUSEUM,

SEPTEMBER 15, 1836.

BY CHARLES HASTINGS, M.D. F.G.S.

(Continued from page 196.)

We may indeed here take very high ground, and say to those babblers who talk of the insignificancy of the labours of the naturalist, "Can *that* be an object unworthy the investigation of the most gifted mind, to which the penetrating genius of an Aristotle thought it not unbecoming to devote its best energies?"

Can any misplaced sarcasm which would represent this study as frivolous, produce in any reflecting mind an insensibility to the unity and grandeur of nature, to the matchless structure of sublunary bodies, and to the beautiful laws of organic life, which must clearly develope themselves to all those who study natural history, according to the rules of the inductive philosophy, as laid down by the immortal Bacon?

Can any unprejudiced mind fail to be interested in the cause of natural science, when he reflects that it was this very subject which called forth all the energies of the great Linnæus, who justly thought that in the temple of Fame a niche would be allotted to patient investigation, and who consequently employed the powers of a methodical and sagacious mind to the classification of organic bodies?

Should not the scoffer at natural history, who fancies he descries in the minute details in which the naturalist is engaged an opportunity of shooting forth the sallies of his wit, recollect that these details are capable of being adorned by persuasive oratory, and that the illustrious Buffon at once threw around natural history the mantle of poetry and philosophy, and by his animated and picturesque descriptions, his bold and original views, and his rich and powerful eloquence, intrenched it in public estimation?

Finally, should not all those who neglect or undervalue this delightful study look to the portraiture of the great, the wise, the philosophic Cuvier, who was an indefatigable collector, a judicious classifier, and a skilful anatomist—who, as a lecturer in the college of France, shone as a successful teacher, and enchanted crowded audiences by the magic of his eloquence—who was also one of the most learned, and eloquent, and powerful writers of his day?—whose unwearied research, lucid arrangement, and pleasing, perspicuous, and nervous style, placed him above the philosophical naturalists of every age—whose discoveries in fossil geology have raised him to the highest distinction, and given birth to new trains of research, which are fast disclosing to us the structure of our planet, and the nature of the convulsions with which it is has been so often shaken. By looking at natural history as surrounded by the halo of these gifted spirits, minds of the highest bearing will be allured to its cultivation, and yet at the same time it will be found accessible and instructive to every class of inquirers; and thus become the support and handmaid of natural religion.

But it is almost impossible for the student of natural science to make any progress without finding, at every step he advances, proofs of design in the creation, and it is not one of the least of the advantages attending such pursuits, that they are continually revealing to the candid inquirer after truth, the nice adaptation of the instruments employed in the universe, by the Creator, to effect their intended purposes. Thus the office of natural history is to expound the works of Omnipotence, and it becomes from that very circumstance one of the most dignified that can employ the human mind. It seems, in fact, to be that peculiar study which is, above all others, most designed to bring man into communion with his Maker. Hence it is manifest how intimately the study of nature is connected with the truths of religion. Every philosophic argument which can be drawn from the material world in corroboration of the books of Scripture, will tend to bring those who doubt to investigate their pages more closely; while those who already believe their divine inspiration will have that belief strengthened and confirmed, rejoicing that sound philosophy bears witness to those truths which they feel to be immutable.

The striking and instructive nature of the terrestrial adaptations to the vegetable and animal world have been dwelt upon with singular felicity by the pious and

philosophic Whewell, in his admirable Bridgwater Treatise, who observes, "that the simple circumstance of the rise of the sap in vegetables could not be effected without a number of particulars being taken into account, the neglect of any one of which would be fatal to the success of this process."

The capability which man and animals enjoy of locomotion is another instance of the adaptation of this earth to the organized beings on its surface. If, for instance, there were an alteration of the gravity of the earth, such a change might be produced in the relation of the animal kingdom to this planet, that the lightness of the fawn, the speed of the hare, the spring of the tiger, could no longer exist with the muscular powers now possessed by those animals; and the motions of man, which are now so easy that they are almost effected without our observation, might become a labour slower and more painful than those of the sloth, I know, however, of no natural phenomena more calculated to awaken admiration and reverence than those complicated adjustments which are necessary to make the atmosphere answer the numerous purposes for which Providence formed it. It seems impossible to suppose that its various properties were so bestowed and so combined any otherwise than by a beneficent and intelligent being, able and willing to diffuse organization, life, health, and enjoyment through all parts of the visible world; possessing a fertility of means which no multiplicity of objects could exhaust, and a discrimination of consequences which no complication of conditions could embarrass.

"'Tis surely God,
Whose unremitting energy pervades,
Adjusts, sustains, and agitates the whole;
He ceaseless works alone, and yet alone
Seems not to work, yet with such perfection framed
Is this complex stupendous scheme of things."

There is another department of natural history full of interest, and worthy of profound meditation, to which I must invite your attention, as being peculiarly deserving cultivation; and yet, strange to say, although apparently of great importance to every individual, it does not receive the deserved regard: for of all subjects of scientific interest, men in general seem to have the weakest curiosity as to the structure and functions of their own body. It is by no means uncommon to meet with men of unwearied research, who are ready to devote themselves with energy to the study of nature—who will ascend mountains with wonder and delight—who will visit with amazement the rushing of mighty waters over stupendous rocks—who can tell the number of the known stars—and who are acquainted with the laws that regulate the flux and reflux of the sea: but you will find these very persons lamentably ignorant of the laws by which their own frame is governed, and of the marvellous results which are every hour produced by them. The structure, indeed, of man's body actually astonishes us with the wondrous excellence of its delicate conformation, for it is in perfect accordance with the most exact mechanical principles. If we examine the heart and blood vessels, through which the vital fluid circulates, we find a perfect hydraulic machine, the heart being a powerful engine, by which the blood is propelled to the extreme parts of the body; the lungs constitute a most inimitable pneumatic apparatus; the beautiful membranes and transparent humours of the eye form an admirable optical instrument; and the organ of hearing is constructed on the most approved principles of accoustics. Thus, from this very brief survey of our own bodies, we must be elevated to a sense of admiration of the creative wisdom of the Omnipotent Architect of the universe, in whom "we live, and move, and have our being." Dr. Arbuthnot thus beautifully illustrates the construction of the human body:—

"Am I but what I seem, *mere* flesh and blood,
A branching channel and a mazy flood?
The purple stream that through my vessel glides,
Dull and unconcious flows like common tides;
The pipes through which the circling juices stray,
Are not that thinking I no more than they.
This frame *compacted with transcendent skill*
Of moving joints, obedient to my will.
Nursed from the fruitful glebe, like yonder tree,
Waxes and Wastes, I call it mine, not me.
New matter still the mould'ring mass sustains;
The mansion *Changed*, the tenant *still remains;*
And from the fleeting stream repaired by food,
Distinct as is the swimmer from the flood."

But, after all, the mind is the standard of the man; and beautiful and striking as are the mechanical adaptations now referred to, they are far inferior to those which are subservient to our mental faculties. The brain is the organ of the immaterial principle, where the mind takes up her residence, and holds communication with material things. This organ being exceedingly tender and susceptible of injury, the slightest local compression disturbing its action, it was necessary that it should be well protected from external violence. What could have been so well calculated for the defence of such an organ as the skull?

Man could never have formed a structure so well caculated for the purpose it serves: the Divine Architect could alone effect it. The poet forcibly conveys this sentiment when he says,

" Observe this skull from out the scatter'd heaps;
Is this a temple where a God may dwell?
Look on its broken arch, its ruin'd wall,
Its chambers desolate and portals foul.
Yet this was once Ambition's airy hall,
The dome of thought, the palace of the soul:
Behold through each lack-lustre eyeless hole,
The gay recesses of wisdom and of wit,
And passions hot that never brook control.
Can all saint, sage, or sophist ever writ
People this lonely tower, this tenement fit?"

The study of natural history, so far as it unfolds the nice adaptation of the structure and functions of the human body to the objects by which it is surrounded, and which are continually affecting it, should receive encouragement from the statesman and legislator, because it is only by the importance of these subjects being deeply impressed upon the minds of the community that we can hope to see those ameliorations effected in the state of the public health which advancing civilization seems capable of realizing. Every day have we in our medical capacity to deplore the ignorance which prevails, in every class of society, of the common organic laws which regulate the animal economy, and the direful effects resulting from whose infringement might be obviated by a diffusion of a general knowledge of them. Doubtless when the study of our common nature shall have assumed its station among the pursuits which no person of education can have neglected without discredit, these evils will in some measure be redressed.

In connexion with this subject, it may not be inappropriate to mention that in towns and cities, where large masses of people are crowded together, the growing desire to foster, by public support, establishments of baths for general resort, and gardens where all classes of the inhabitants may freely inhale the breath of heaven, should be actively encouraged by all true philanthropists; and those enlightened individuals, who have stood prominently forward in this beautiful city as the advocates of improvements in our social and moral condition, should not rest satisfied untill they have added these important improvements to those which have of late years conduced so much to its credit and renown.

Need I say a word to my medical friends, in order to convince them that it is incumbent on every cultivator of the healing art to exert himself in his sphere of life, and to do all in his power to promote the objects we are now met to forward. I may call to their recollection that from the animal, vegetable, and mineral kingdoms are produced nearly all the remedies that employed in the treatment of disease. I may also remark how necessary it is for them to study the laws which govern the atwosphere, since, independent of the effects of those vicissitudes to which the human body is daily exposed, there are certain occult conditions of this element which have a most undoubted effect in producing the most devastating diseases that afflict mankind; and this induced Hippocrates to say, that to discern with precision the constitution of the seasons and the diseases that attend them is the greatest excellence in the art of physic. We have moreover in modern times a remarkable instance of the happy results which ensue to medicine, and eonsequently to mankind, from physicians attending to the study of natural history; for to this probably we are indebted for the invaluable discovery of vaccination. Had not Jenner, who practised medicine in the country, been engaged in these pursuits, and continually watching the daily operation of the laws of nature, the fact of a certain disease among cattle being communicated to the persons who milked them would not have been considered of much importance, and would certainly have never been so philosophically applied as to produce a most important chain of reasoning, whereby conclusions were established and a discovery made by which the ravages of small-pox, one of the direst scourges of the human race, have been greatly mitigated.

I have thus enlarged on the utility of natural history, and hope I have succeeded in demonstrating the fallacy of the notion held by some persons, that natural history may be very well as an amusement, which serves to guile away an idle hour, but that it is not deserving further.

If, however, the claims of natural history upon our attention, as being necessary to impress upon us a due consideration of our physical condition, relatively to the world around us, were not so strong as they undoubtedly are; still there are in these pursuits so many sources of intellectual gratification, that the mind must be dead indeed to all the better feelings of humanity, if it were incapable of appreciating them. The lonely wanderer

in the country can attest how greatly the beauty and wonders of creation are heightened by an insight into vegetable organization; for who is there that does not admire the beauty and variety of flowers, of fruits, of shrubs, of plants, of trees, nay, even of the very grasses which we tread beneath our feet. The variety and the beauty of flowers are endless and inexhaustible, and even the commonest hedge-flowers are of hues so beautiful, and structures so exquisitely delicate, that we cannot avoid a feeling of ignorant wonder when we regard what appears a prodigality of loveliness; and if we proceed further, and examine the interior structure of these productions, and are shown by the microscope what an elaborate preparation of vessels, and tubes, and cavities they contain, we do not admire their beauty less, but we admire the power and wisdom which created them more, and are constnained to say,

"Oh, good beyond compare!
If thus thy meaner works are fair;
If thus thy virtues gild the span
Of ruin'd earth and sinful man;
How glorious must that mansion be
Where thy redeem'd shall live with thee!"

The study of nature can never be so well or so delightfully prosecuted as in her own haunts, remote from cities. Hence it is that no pursuits can be better adapted for a country life. We are then, as it were, in the boundless temple of nature, and we explore truth in all its various recesses. There are many, however, who cannot enjoy the recreations of the country naturalist, or gratify their love of nature by contemplating her works in the field; but "Natural History," says Mr. Swainson, "has this peculiar advantage, that it can be prosecuted in one shape or other by almost every body, and under every ordinary circumstance. Of all sciences, it is that which requires, in most of its departments, the fewest materials; it is as much within the reach of the cottager as the professor; or rather we sould say, it embraces questions which can be solved by the former just as well, and frequently much better than by the latter. If, as is generally the case, the amateur confines himself to the productions of his own country, three or four elementary books, and as many implements of chace, are all that is necessary. His own exertions will procure him a collection; and he thus furnishes himself with additional materials for study; but even these are not absolutely essential. The appearances of Nature can be investigated and recorded without acquiring the technicality of scientific language; nor for such purposes are collections and museums indispensable. A fund of interesting anecdotes of our native animals may be collected by an attentive observer, who is nevertheless ignorant of their scientific names. White, of Selbourne is a striking example of this truth. His letters show a very confined knowledge even of the imperfect arrangements of the period in which he wrote; yet how delightful are his observations! The fact is he looked to nature and simply recorded what he saw."

3. In pursuance of my proposed plan, I will lastly succinctly trace the progress of Natural History from its earliest rude and barren state to its present advanced and promising condition, by shortly laying before you some account of its most successful labourers.

One of the greatest pleasures we experience in the pursuit of knowledge is in becoming acquainted with the thoughts, feelings, pursuits, and labourious investigations of the illustrious dead, and no less illustrious living authors. If this be true of the general pursuit of knowledge, it is no less so of the particular branch of it to which the labours of this Society are more especially devoted.

Natural History existed in the earliest states of society of which we have any record. We find sufficient notices of it in the Old Testament to convince us that, in that early period of the world, the productions of nature were studied with great interest. Indeed it is evident that Solomon, the wise king of Israel, paid no small attention to zoology and botany; for it is said of him, that "he spake of trees, from the cedar-tree that is in Lebanon, even unto the hyssop that springeth out of the wall: he spake also of beasts, and of fowl, and of creeping things, and of fishes." (1 Kings, iv. 33.) But admitting as we do, that Natural History attracted attention in very early times, we must concede to Aristotle the merit of having first established it on a scientific basis. He flourished about 384 years before the birth of Christ: and medicine can fortunately claim him as one of her sons, for his father was a physician. He was a man of gigantic powers of mind, and he employed them in the study of philosophy, poetry, rhetoric, and law. Like many of the philosophers of antiquity, who lived at a time when the great body of the community was unable to appreciate the true value of

knowledge, he was persecuted by an ignorant populace. During the life of Alexander the Great, who was his friend, he was treated with respect; but after his death he was obliged to withdraw from Athens, and is said to have shortly afterwards died of vexation and regret. An elegant writer, in speaking of the Stagyrite's claim to consideration as a naturalist, says, "had this extraordinary man left us no other memorial of his talents than his researches in zoology, he would still be looked upon as one of the greatest philosophers of ancient Greece, even in its highest and brightest age. But when it is considered that his eloquence, and his depth of thought, gave laws to orators and poets—that he was almost equally great in moral as in physical science, and that no department of human learning escaped his research, or was left unillumined by his genius, we might be almost tempted to think, that the powers of the human mind in these latter days had retrograded, and that originality of thought and of philosophic combination, existed in a far higher degree among the heathen philosophers than in those who followed them." It seems unnecessary to make any further observation on the works of this great genius of antiquity, and we may pass on from the Greeks to the Romans, among whom Natural History made no progress. Pliny is the only name that can bear any comparison with Aristotle. He lived in the reigns of Vespasian and Titus, and wrote a Natural History in thirty-seven books. In intellectual power he was greatly inferior to Aristotle, and was incapable of those enlarged general views which characterize the works of the Grecian sage. Pliny, moreover, too readily lent his belief to the marvellous, and by thus giving proof of a mind not of the first order, the fact is explained, that his works do not so much show originality of genius, but may be considered as a good compilation of the knowledge which he had derived from studying what had been done by Aristotle. After the time of Pliny, Natural History declined under the Romans, as it degenerated into a system of tales and prodigies, undeserving the name of a science.

A long night of intellectual darkness extending over a period of nearly fourteen hundred years, followed the decline and fall of Roman greatness; and it was not till after the revival of learning in the sixteenth century that any thing worthy of remark has been handed down to us. Soon after the revival of learning two most laborious writers in zoology appeared, Aldrovandus and Gesner; they both adopted Aristotle's method.

But it were unjust to the memory of one of the greatest of mankind not to mention that, for the subsequent successful advancement of Natural History, as well as for that of almost every other branch of useful knowledge, we are indebted to the rules of induction laid down by our immortal countryman, Bacon.

"Hapless in his choice,
Unfit to stand the civil storm of state,
And through the smooth barbarity of courts,
With firm but pliant virtue, forward still
To urge his course, him for the studious shade
Kind nature formed, deep, comprehensive, clear,
Exact, and elegant; in one rich soul,
Plato, the Stagyrite, and Tully joined.
The great deliverer; who from the gloom
Of cloistered monks, and jargon-teaching schools,
Led forth the true philosophy, there long
Held in the magic chains of words and forms,
And definitions void; he led her forth,
Daughter of heaven; that slow-ascending still,
Investigating sure the chain of things,
With radiant finger points to heaven again.

He complains that, before his time, the greatest part of the study of philosophers was consumed in moral philosophy, which was as the heathen divinity. And in ancient times a great part of the best wits betook themselves to law pleadings and causes of estate; specially in the time of the greatness of the Romans, who, by reason of their large empire, needed the service of all their able men for civil business, since which time natural science was never any profession nor ever possessed any whole man, except perchance some monk in a cloister or some gentleman in the country, and that very rarely.

It was not that Bacon himself added so much to the stock of our knowledge of Natural History as that by the rules of philosophizing which he imparted, his successors were enabled to make great progress. His publications on this subject are to be found in the last part of his Organum, and nothing can exceed the modesty with which he speaks of what he had done. He says, it is a thing exceedingly little in quantity, like a grain of mustard-seed, but yet a pledge of those things which, God willing, may ensue.

After Bacon, followed in our country Willughby and Ray, the successful result of whose combined labours may in great measure be attributed to their having imbibed the true spirit of the inductive philosophy, and thus presented as it were to us the first fruits that arose from this mode of cultivating this field of knowledge.

A PRACTICAL VIEW

OF

LYTHOTRITY:

WITH REMARKS ON

THE LATERAL OPERATION OF LITHOTOMY.

BY MR. ASTON KEY.

(Continued from page 201.)

My first acquaintance with lithotrity did not prepossess me much in its favour. Many years ago, I obtained, through a friend at Paris, the three-branch instrument invented by Civiale, and constructed by Charrière, for the purpose of drilling the stone. The difficulty that I experienced in using it on the living subject, and the incomplete manner in which it crushed the shells of the stone after excavating its interior, induced me, after two or three unsuccessful trials, to abandon the operation, as imperfect.

A fresh impulse seemed, however, to be given to lithotrity, and many of the imperfections of Civiale's instrument to be obviated by the improvements suggested by Heurteloup. Soon after his arrival in this country, I invited him to lecture to the Surgical Class of Guy's Hospital; in order that the gentlemen who were studying there might, through him, be made acquainted with an art that I but very imperfectly understood. Baron Heurteloup politely accepted the invitation; and gave a full explanation of the instruments that he used, and of the advantages they possessed over those generally employed. The lecture did not embrace the general principles of the operation of lithotrity, but was confined to the mechanism of the instruments which he had invented. The ingenuity of these instruments, and the dexterity of the operator, were alike the subjects of admiration; but instead of simplifying the operation, they appeared to render it more complicated, by the multiplication of appliances. Each presented a new difficulty: so that I resolved to abandon all idea of lithotrity, until it became less complex, in its performance, and in the instruments required. It reminded me, indeed of the apparatus major formerly used in lithotomy; and I accordingly did not despair of seeing the "brise coq," the "vergule," and the other intricate machinery, superceded by a simple but efficient instrument; and as the apparatus major has been by the operation of Frère Jacques.

Accident soon led to the discovery of an instrument, as simple in its application as the former had been complicated, and possessing the additional merit of being more effective in accomplishing its purpose. Report attributes the idea of percussion to Baron Heurteloup having been compelled to finish an operation by striking the drill of his instrument, the bow being rendered unserviceable by an accident. His application to Mr. Weiss on the subject brought to light an instrument constructed, long previously, for the purpose of crushing a stone, and resembling in shape a catheter with a shortened beak. This instrument furnished the idea of the present lithrotite: it has undergone several modifications and improvements; but, in principle, the instrument now used is much the same as that originally constructed by Weiss.

Not long after the introduction of percussion into lithrotrity, I had an opportunity of witnessing an operation by Baron Heurteloup, in which he used the hammer: the simplicity of the operation, the rapidity of its performance, and the apparent security with which the hammer was struck without giving pain to the patient, presented a favourable contrast to the slow and uncertain operation of the drill;—not the least remarkable part of the performance being the almost entire unconsciousness which the patient evinced of the instrument being struck; as the vice which held the percussor transmitted the vibrations into the bed on which he lay; so that the bladder scarcely felt the slightest shock when the hammer was used. In seizing the stone, the superiority of this over the three-branch instrument was evident. I left the baron's house impressed with his dexterity, as well as with the great improvement which the change in the instrument had wrought.

My conviction, that lithotrity would, in the course of time, supersede lithotomy, in many cases in which the latter was employed, was confirmed by the new features which percussion had given to the operation, and by the advantages it possessed over the former mode of crushing the stone by the drill, in the subsequent steps of breaking up the fragments. I had always had misgivings as to the efficacy of the "brise coq." Though ingeniously contrived for the purpose of crushing the fragments, which the three-

branch instrument could not seize, and well adapted for this purpose when once it got them within its grasp, it did not seem well devised for seizing them. It was straight; and opened, by the divergence of its two blades, like a pair of forceps; and therefore could only be brought to act within a very limited sphere in the bladder. The difficulty of seizing small fragments with such an instrument must have been considerable, and the consequent risk of leaving small pieces of stone in the bladder great. This difficulty—and a main one it was in my view—was wholly obviated by the percussor, which could be brought to seize and to act nearly as well upon the scattered fragments as on the entire calculus. This seemed to be no slight improvement, in an operation, one principal danger of which was, that of leaving fragments in the bladder as nuclei for future stones.

From this time I began to study lithotrity, in the hope that it might be made available to the general surgeon, as an occasional substitute for the knife. With this view, I endeavoured to overcome the difficulties of using the instrument; to ascertain in what the dangers of the operation consisted; and to acquire, by frequent practice, that facility and readiness in manipulation, which lithrotrity requires. My expectations have been fully realized. Since commencing the practice of lithotrity, I found that more than half the number of adults who have come under my care have been fit subjects for the operation; and that, in the majority of persons afflicted with calculus, it has decided advantages over lithotomy. One, among the principal advantages which lithotrity has conferred upon surgery, is the early application which patients are induced to make for the relief of their disorder.

Formerly, it was a matter of notoriety to all surgeons, that patients labouring, or suspected to labour, under calculous disorders entertained a feeling of dread, almost amounting to horror, at the idea of having a stone in the bladder. The disease was associated in their minds with a most painful and dangerous operation, that must be had recourse to, as a last remedy, when palliative measures failed to afford relief to their sufferings. The dangers and sufferings of lithotomy, magnified as they were by the patient's fears, often deterred him from applying for medical assistance, when the pains of stone first came upon him, by the dread of having his worst fears confirmed. Even if the presence of a stone in his bladder were ascertained, it was, in too many instances, allowed to remain undisturbed, in the vain expectation that it might not increase in size, and that the severity of pain might continue to be mitigated by the medicine that so often had been found to assuage his pangs. The operation was thus procrastinated, until the stone acquired a large size—often until the bladder had become diseased, and the patient's health undermined by protracted sufferings. The knife, it was thought, could be at any time employed; and its use was too frequently deferred till it became impracticable.

The change that has taken place in the feelings of persons who are troubled with calculus is attributable to lithotrity. It is one, certainly not the least, among the benefits conferred on such sufferers by the introduction of this operation. They no longer entertain the dread of their symptoms depending on the presence of a stone: and when the stone is found, they cheerfully make up their minds to undergo an operation, which they regard as free from danger, and nearly so from pain. I have known a patient, and more than one, to be pleased with the discovery of a stone in the bladder; convinced, as he expressed it, that he could look for an easy cure from the new operation. The exaggerated statements of the advantages of lithotrity have thus not been attended with good: they have been the means of inducing persons to come forward to obtain relief, when the disease was incipient, and the stone small.

Nor has it been without its influence on the surgeon. Formerly, when a patient first consulted him for symptoms of dysuria followed by pain, he was content to palliate the malady by sedative and alkaline medicines, regardless whether they were caused by prostatic affection, stone, or any other local disturbance. The use of the sound was deferred: that could be used at any time: and, usually, it was first introduced into the bladder when the patient's sufferings had become severe and protracted. He knew that the patient would not easily be brought to submit to the knife; and that to ascertain the existence of the stone in the early stage of the disease was a matter of no great moment. The operation of sounding was also conducted in a slovenly manner. If the stone were not discovered when small, it would be when large; and no advantage was gained by operating

in the early stage. Now, the surgeon examines the bladder with great care: knowing the importance of discovering the calculus at the earliest period, he no longer leaves its existence a matter of doubt, but proceeds at once to examine the bladder, and determines its presence; or, by a skilful searching of every part of the viscus, ascertains that a stone does not exist. In the present state of the art, a surgeon would be highly culpable who did not decide, by the sound, whether the symptoms for which he was consulted arose from calculus, or from some other cause.

The early symptoms of the disease are thus watched with more jealousy on the part of the surgeon, and are not so scrupulously concealed by the patient. The advantages of an early knowledge of the existence of a stone, and of prompt measures for its removal, are known to both. The result of this is, that patients apply for advice when the stone is small, the bladder uninjured by its presence, and the kidneys free from disease. In three persons out of four who apply for advice for symptoms of calculus, the size of the stone and the conditions of the viscus render lithotrity an easy and a safe operation. Within the last three or four years, I have remarked the very early application that patients make for advice, and the small size of the stone when first discovered, compared with those of former years. In private practice, I have not extracted, by either operation, a calculus larger than a good-sized mulberry; except in three cases, in one of which the stone was of unusually rapid formation. It rarely acquires any considerable size before the symptoms of its presence become sufficiently urgent to induce the patient to seek for assistance: often, when it is so small as to be with difficulty discovered, it causes extreme pain after the expulsion of the urine; and it will not often be found to exceed a hazel-nut when first the surgeon is consulted. Hence lithotrity will become even more employed, as it is made more generally known.

The advantages of lithotrity cannot be sufficiently or truly estimated, without instituting a fair examination of the dangers respectively attending the two operations. I shall first review those that are incidental to lithotomy; and endeavour to determine how far the new operation enables us to avoid them, without presenting in their place others of an equally grave character.

There is no age at which lithotomy is impracticable. From the infant to the most aged, stones may be removed, by the lateral operation, with perfect ease and security. At the age which is peculiarly unfitted for lithotrity the knife may be employed with comparatively little danger. It is difficult to mention any operation in surgery so uniformly successful as lithotomy is in children. The incomplete development, and the consequently little susceptibility of the parts involved—the small size of the vessels, and the little risk of hæmorrhage—the yielding nature of the textures, rendering force unnecessary in the extraction of the stone—are circumstances that combine to divest the operation of much of the danger that surrounds it, when performed on the adult. It is a rare occurrence to lose a young patient when the constitution of the child is favourable. The sister of one of the female wards told me that she had never lost a patient after lithotomy, and had had more than thirty do well. Much irritation in the system does not appear to be produced, even during the period of dentition, when surgical operations in general are accounted hazardous. I have cut a child for stone at the early age of sixteen months; and have assisted at an operation when the patient had only completed its thirteenth month. The removal of a source of irritation to the constitution may explain the little irritative effect that follows lithotomy in children. Though these young subjects are happily not liable to infiltration of urine into the cellular membrane, or to peritonitis, they are exposed to another source of danger, from sudden prostration, under which their powers will sometimes sink. This depression occurs in those children whose parents accustom them, even at their tender age, to the pernicious habit of dram-drinking; a custom partly arising from the erroneous idea, that gin, by increasing the urinary secretion, tends to allay the irritation produced by the stone. Such children, when brought into the hospital, being subjected to the lowering effects of a milder and restricted diet, and to the action of brisk purgative medicines, are rendered irritable and susceptible, and can ill bear an operation that exhausts their energy, and is attended with some loss of blood. A small dose of syrup of poppies, with a tea-spoonful of gin, or whatever liquor they may have been accustomed to, soon restores the tone of the nerves and the vigour of the

circulating system. After the operation is concluded, there is little suffering for the child to endure: the wound requiring no dressing, and no painful examination, the little patient proceeds, undisturbed, to complete convalescence. Another advantage which the child enjoys, is the absence of mental anticipation, a state of mind that perhaps constitutes half the sufferings felt at any operation, and may tend to increase the danger. The freedom from such anticipation in the child diminishes the actual danger, and also exempts its feelings from half the horrors which the man cannot but feel. Seeing, then, that so little risk and suffering attends lithotomy in children, it is difficult for us to find an equally safe and efficient substitute: it can scarcely, indeed, be said to be required.

From childhood to the age of puberty the dangers attending lithotomy can hardly be said to increase. Boys of thirteen years of age suffer scarcely more from the operation than children, and for the same reasons: but after puberty, the risk begins to be greater. The development which the parts about the neck of the bladder acquire increases the volume of the structures opposed to the knife: the incision is therefore necessarily larger; and thus the number of vessels divided is also increased. These vessels are not only of larger size than in the child, but they are relatively of larger calibre. The stimulus given to the circulation, and the additional and rapid growth of the organs at puberty, are attended by a corresponding enlargement of the pudic artery and its branches; which offers one, and perhaps the principal, source of danger which the operator has to encounter in the adult.

It is not ingenuous for lithotomists to deny the occurrence or the danger of hæmorrhage. It is unquestionably most formidable when it does occur; and I apprehend that few surgeons who have seen much of lithotomy have not occasionally witnessed a loss of blood larger than the patient could well bear, and which has had an indirect effect on the result of the operation. It is rare for patients to die immediately from loss of blood. The arteries are not large enough to afford a hæmorrhage sufficiently rapid to induce fatal syncope; but the draining sometimes continues for hours; either backward, into the bladder; or slowly, by the external wound; gradually exhausting the patient, and incapacitating him for the struggle which he may have to undergo with visceral disease or inflammation. It is this secondary effect that constitutes the chief danger of bleeding after lithotomy, and usually takes place in patients who have slight enlargement of the heart and a large arterial system. The pulse is found to be full and large, even when the patient appears exhausted by the loss of blood: the lungs become gorged, and, under the depressed state of the nervous energy, become embarrassed in their circulation. The heart, thus encumbered by the difficult pulmonary circulation, relieves itself by serous effusion into the pericardium, and death speedily ensues. If inflammation come on, either in the peritoneum or the vesicle cellular tissue, the prostrated powers of the patient disable him from setting up a barrier to the mischief by a salutary adhesive process: in the latter case, the action assumes the suppurative form, and cellular abscess is the fatal consequence; and in the former, a slight extension of the peritonitis, producing opaque serous effusion, is sufficient to induce fatal prostration.

I may, perhaps, over estimate the ill effects of loss of blood, on the issue of surgical operations. It is from frequent observation of its effects in the larger operations that I have formed my opinion. I cannot understand the good which a free hæmorrhage is supposed by some to do, in the prevention of inflammation. Enough blood is lost at every operation, be the surgeon ever so careful, to unload a distended state of vessels, and to diminish the chance of excessive action. Beyond this, all that is lost tends but to increase the irritability of the patient, and to deprive nature of her powers. It is far better to lower the patient's system, should it be plethoric, by a well-regulated system of diet, not to the extent of inducing irritability, but to the point of preventing superabundant nutrition. It is very rarely that I bleed a patient before an operation, even when it is one that is attended with very little loss of blood. I prefer preparing him by diet; and defer taking blood from the arm, till symptoms of approaching inflammation demand it. There is a class of persons who are said to be benefited by taking away a pound of blood before the operation: these are, the hale and healthy men. These persons, it is true, are not rendered irritable, and appear none the worse for the loss; but such persons are not disposed to unhealthy inflammation, and the bleeding is alto-

gether unnecessary. I have notes of many cases of disease, of accident, and of operation, attended by a large loss of blood, which have been followed by inflammation, slight, but sufficient to destroy the already exhausted patient.

There are several sources that furnish the hæmorrhage; but, in all cases, the bleeding comes most freely from the upper angle of the wound. The higher therefore the incision is carried, the greater, *cæteris paribus*, is the probability of bleeding. The pudic trunk itself is, I apprehend, rarely wounded. The artery of the bulb, and the superficial perineal branch, often bleed profusely, especially the former. This vessel, traversing the upper angle of the incision, is generally divided; and its great variety in size, in different persons, and on the two sides of the same individual, renders the quantity of blood from this artery so variable. If the incision be carried very low down in the perineum, it may escape altogether; but it is not easy to cut below it. I have tried several times to perform the operation, on the dead subject, below the artery of the bulb; and though I could generally avoid it, by keeping the incision low, I believe it is almost always divided. The end of the vessel entering the bulb is often seen to bleed profusely, while its other extremity is closed; and pressure on the pudic artery does not restrain it. Indeed, hæmorrhage after lithotomy often continues, notwithstanding pressure may be made on the pudic trunk. I am averse to the practice, adopted by some surgeons, of plugging the wound with lint or sponge introduced on a catheter. The cellular membrane is irritated by it, and an unhealthy form of inflammation ensues; while the catheter, being soon blocked with coagulum, does not carry off the urine from the bladder. I have, however, found advantage in checking the bleeding by means of pressure, made upon the upper part of the left side of the perineum by a forked pad of lint fixed to a piece of cork. Pressure in this mode also reaches the deeper branches of the prostate, from which the blood sometimes oozes for a long time after the patient is placed in bed, and distends the bladder with masses of coagula. The accident of hæmorrhage is further increased by occasional varieties in the distribution of the branches of the pudic artery;—a remarkable instance of which was published by the late Mr. Shaw, and has been further illustrated in Mr. Stanley's work.

Infiltration of the cellular membrane with urine, as it escapes from the bladder, is another danger which the lithotomist has to dread. This, in some degree, is dependent on the manner in which the operation is performed, and partly on the constitution of the patient. It occurs more frequently in the adult than in the young subject. Most generally, it is the consequence of violence done to the deep perineal fascia, which sloughs or ulcerates, and allows the urine to escape backward, in the reticular tissue surrounding the neck of the bladder. I have, however, known the infiltration to ensue, when the stone being small, the incision to the prostate gland was limited, and no force was employed in the extraction of the calculus. In such cases, the constitution of the patient is in fault: an unhealthy form of inflammation attacks the cellular membrane and fascia, which breaks down and destroys the barrier that nature opposes to infiltration. The sloughing also extends to the superficial wound, and to the incision of the prostate; the inflammation induced by the incision partaking of the asthenic irritability, of the patient's system. A more frequent cause of infiltration is, the violence committed in dragging the stone through the incision in the gland.

(To be Continued.)

The London Medical

AND

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Saturday, May 27th, 1837.

OPHTHALMIC HOSPITALS—QUACKERY.

None of the public charities of this community has exhibited, or continues to present, a more flagrant display of abuse and other misapplication of alms, than what are called Ophthalmic Hospitals. They have been daringly instituted to promote the private interests of selfish and unprincipled individuals;—they have contributed in no small degree

to obscure the atmosphere of ophthalmic surgery; and they have fearlessly given countenance to quackery and imposture.

The origin and principles which guided the conduct of those who gave birth to, and reared, the Eye Infirmary in Charterhouse-square, since imported to Moorfields, were some years ago ably exposed in a contemporary journal; and it appeared from the statement then given in the *Gazette*, that a new mode of operating for cataract had been discovered by the Surgeon of that Institution, which was trumpeted forth in the printed Reports, as being something far superior to all other modes of operating; but which for the private advantages of its author, the wily committee deemed it expedient to keep a profound secret; and even after the decease of its immortal inventor, with shame be it again told that this *secret* operation was continued to be performed at that institution, by certain individuals, to whom the *mystery* was imparted, but whose position, we hesitate not to say, ought to have placed them far above such conduct. The fraud thus committed on the public was, however, soon brought to light; and, as might have been anticipated, the *new* invention turned out to be an operation well known in Germany, and, one applicable only, to some particular cases of cataract.

The success which this institution met with, excited the jealousy of some individuals, whose practice was confined to the treatment of diseases of the eye; and hence another institution was soon established in Nassau-street, in the west end of the town, by the late Mr. Wathen Phipps, and although he had not the presumption, like the conjurors in Charterhouse-square, to claim the public confidence on the grounds of any new invention, he took the precaution of shutting the doors of the institution against all such members of the profession as might feel disposed to observe the cases and the treatment which was employed for their cure. This Eye Infirmary was afterwards, for private ends, imported to Cork-street, where the back premises of the eminent oculist were devoted to his charitable purposes, and where they still remain a monument of its venerable founder.

The next remarable era, in the history of our ophthalmic-bazaars, was the attempt of a celebrated pupil of the Charterhouse-square establishment, in strict imitation of the principles of his masters, to establish an Ophthalmic Hospital for the army; and many of our readers must recollect the exposè which was made before Parliament of the fraud and quackery of which the Surgeon of that Eye Infirmary was publicly accused. To crush this pseudo Military Eye Hospital, and to preserve the treatment of the blind within the legitimate and hallowed walls of the Army Medical Board, a counter-establishment was set on foot, by the able and no less charitable Director General, and an eminent individual was chosen, who was considered qualified in a most peculiar manner, to perform the important and no less anxious duties of the infant Military Establishment. A happy combination was next effected in this metropolis, by an able adventurer, who framed an institution by which those two invaluable organs, the eye and the ear, were both brought under the monoculous observation and skilful manipulation of the able Director of this Adelphic institution.

It is impossible to review these multiplied ophthalmic *charities*, without contemplating the advantages which have resulted to the commuuity and to medical science from these establishments. We are not aware that a single improvement

has been suggested, much less discovered, by any of the bright luminaries which have adorned the walls of Charterhouse-square and Moorfields from the commencement of the institution up to the present period. The improvements and discoveries in the Augean building of Cork-street being as yet quite unknown to the world, we have a right to infer will be equally valuable as those of Charterhouse-square. Time has also shown, that discoveries of the Military Depôt have not been more effulgent; and unless it be admitted that cataract is curable by the direct application of the lapis infernalis, the Adelphic Institution of Dean-street, Soho-square, has no greater claim on the liberality, generosity, and support of a discerning and enlightened public.

It is, however, the events which have been lately taking place at the Westminster Ophthalmic Hospital, which are chiefly deserving of public animadversion at this time,—a system having been going on, to endeavour to establish the value of empirical remedies, by submitting unfortunate sufferers, who claim the assistance of the Institution, to a series of experiments for furthering the views and base purposes of empirics.

The experiments which were made on some of the unfortunate patients of this hospital, were fully exposed in this as well as in the other medical journals; and the same practice which has been lately adopted of selecting the sick poor for experimental researches, has brought to light, and will still further exhibit before the public, its manifold evils and the baneful effects which it exercises upon civilized society. It would indeed be well if some philanthropic individuals connected with our various public hospitals would step forward, and manfully oppose and discountenance all such practices of their medical officers, and contrive some other means of remunerating the medical attendants, than the system which we alluded to in our last number, of extorting money from the student of medicine in the form of an attendance fee, or of giving themselves publicity and an ephemeral reputation by a sacrifice of the interests of the sick poor. The whole of our hospitals require to be speedily reformed, and until they are so, experiments will continue to be made on the patients to a greater or less extent in every one of those institutions. The whole hospital system is bad and must be improved, for we scarcely know a single institution to which the strictures which we have offered do not apply.

IRISH MEDICAL CHARITIES' BILL.

Lord Morpeth intends to introduce a bill for the regulation and support of public charities for the sick poor of Ireland, which is warmly supported by Mr. O'Connell and the liberal Irish members in the House of Commons. It will be opposed by the tory and monopolising Irish members who defend the Dublin College of Surgeons, whose members are at present exclusively privileged to be surgeons to county infirmaries. The college has sent a deputation consisting of Mr. Cusack Roney, Dr. Evanson, and Mr. Corr, to endeavour to palaver the government in favour of allowing the above shameful and unjust monopoly to continue. But the presence of Mr. Phelan and Dr. Nugent, the representatives of the great body of the profession in Ireland, sadly discomfits the monopolists, and we confidently predict, will completely destroy their sanguine hopes. It is to be recollected that the majority of the medical practitioners in the Sister Kingdom are members of the London and Scottish colleges, and that they were

compelled to leave their own country by the corrupt monopoly of the Dublin colleges, in order to obtain legal qualifications. They are ineligible to be county hospital surgeons, although most of them are medical officers of dispensaries, fever hospitals, and other public charities. No one but a monopolist will approve of the wholesale exclusion, or of the continuance of a law which is unjust upon the face of it. There is little doubt but the Commons will repeal it; but what will become of it in the Lords, is by no means easy to determine.

The time has arrived when all liberal-minded men agree, that duly qualified members of the profession in England, Ireland, and Scotland, ought to enjoy equal privileges in every part of the British dominions. This is the opinion of Mr. Warburton, who has at length announced his intention in the House of Commons last week, "that he will, at no distant period, introduce a bill for effecting important changes in the medical law, founded upon the testimony of persons, who were fully competent to form an opinion on the question." We hail this declaration with delight, as it affords the balm of consolation to the whole profession, except the monopolists. No law can render the polity of the profession so degraded as it is, and any modern enactment, more especial lyproposed by the astute and able chairman of the Medical Committee of the House of Commons, must be a boon to the profession at large, and a death blow to the monopolists.

FAMILY CORRESPONDENCE.

My dear Father,—There has been a regular *flare up!* at the Charing Cross Hospital, and the College of Surgeons has withdrawn what the Council call their RECOGNITION, which is nothing more than a power invested in that body by a silly charter, to permit parties connected with certain charitable institutions to extort money from the student under false pretences. I am quite ignorant of the cause of this proceeding, and Doctor Golding, (not Goolding as I last spelt his name,) takes the greatest care to keep us in blissful ignorance upon the subject. It does not require the eye of a lynx to observe that Golding is in a most nervous state of mind; one would really imagine that all the electricity of the "infernal machine," with which he used so successfully to astonish the minds and bodies of the unfortunate patients in Villiers Street, was concentrated in his own frame; when he was returning me the fee which I paid on entering, his very hairs stood on end, and every sovereign seemed to adhere to his pliable fingers with a bird-lime tenacity.

I have, however, my dear father, thank God, got my money back, so that your mind may be at ease upon this head. Howship never ventures near the place; I understand he has been guilty of some extraordinary transaction, and is afraid of being seen at the hospital until the very unfavourable impression it has created against him blows over, when it is expected he will have the audacity again to adorn its wards, as he and Golding are as thick as "FIVE in a BED."

Doctor Shairman is constantly in the hospital; it is said he is "on the look out for squalls." This is highly probable, as he has the character of being a very sly old cock; and, without the assistance of glasses, generally picks up the corn, whilst the younger birds are amusing themselves in tossing about the chaff. I would not at all wonder if he was trying to get his nephew, who is a hedge preacher, a regular *Mawworm*, some good thing to satisfy his pious cravings. Doctor Cheerone looks terribly majestic, and tacks through the hospital wards like a "sea porpoise in a storm," or some other such production of nature's "handy work," in a similar predicament. I only knew a few days ago that Doctor Sigmond and Mr. Pettigrew had been officers in the hospital, and had left it in disgust; it is said they intend to lay before the profession and the public a full exposure of all the doings which have been going on there for some years; but as these jobbings, no matter how interesting they may be to the Council of the College of Surgeons, and to those interested in a more personal manner, can never put

"Bread on your table,
Or oats in your stable."

I shall not pester you further about them. I at all events have learned, during my short stay in London, the necessity of keeping my "bawbees," as you so funnily called them in your last, warm in my pocket, until I can be certain of getting value for them, and I shall not now enter to any hospital until I see the honourable member for Finsbury, were I even to lose the medical session by the delay. By-the-bye, I omitted to answer your query about Golding; he is the same person you allude to; but he never delivered any woman of more than two children at one lying-in. In the ridiculously extravagant case which appeared in the Sunday papers, the placenta was retained a few hours after the delivery, which gave rise to the report of the third child being extracted, and as the case occurred in some low vulgar neighbourhood, the *three black crows* were not long in being magnified into their proper proportions, and has to this hour remained uncontradicted.

You will, no doubt, be surprised to hear that I have cut the Greville Street Free Hospital School of Medicine. I fortunately only paid two pounds on account when I entered there, and my young Scotch friend with whom I am now living, advised me to do so. I have since made inquiries about the place, and learn that it was originally instituted by a Mr. Marsden, for the cure of malignant diseases, and that he and Mr. Jones, who was his assistant surgeon, encountering more difficulties in curing them than they anticipated, augmented their forces by getting Drs. Uwins and Ryan appointed as physicians to the hospital, Messrs. Tweedie and Lucas as surgeons to it. After a little time the newly appointed physicians and surgeons finding the malignant atmosphere of the place not to agree with their constitutions, retired from it in disgust. When I tell you that the Greville Street Free Hospital School of Medicine and all, would fit in the outhouse at home, it is saying enough to you about it. The extraordinary puffing which is carried on in the newspapers and journals at the commencement of every session, would make one residing in the country almost imagine that one half of London consisted of Medical Schools, and that the other was a huge hospital, or some other such "imaginative extension of the mental powers," as Professor Mayo says in his invaluable physiological compositions. The advertisements thus put forward, contain "promises" which never are realized; and to carry out the imposition at the end of each session, the most impudent paragraphs are put into the papers, particularly the country papers, giving the most flattering accounts of the number of pupils which thronged their empty benches, the great contest there was for prizes, &c.; that Mr. B. of Bath, Mr. D. of Durham, Mr. L. of Liverpool, Mr. N. of Newcastle, and so on to the end of the alphabet, obtained either a medal, a certificate of honour, or some other such CLAP TRAP; that the Hon. Mr. This, My Lord That, or the Bishop of some place presided at the "distribution of the prizes;" and though last, not least, that the self-styled professors were highly delighted to find their labours crowned with such wonderful success.

I can well conceive, after statements of this description appear in the papers, and are honestly read by a person in the country, that it might not be easy to convince him that the chairman on such occasions is totally ignorant of the real state of the school, and that having something in general more important to attend to he cares little about this, so long as it ministers to his vanity and his political speculations to blazon forth in the papers as having filled the chair. Nor are you in the country a bit the wiser of your son's or your pupil's progress by his getting a medal or a certificate, all such proceedings I now find are farces, a full account of which I shall lay before you in some of my future letters, as I have prolonged this to an unreasonable length.

My young friend Alexander Scott Macdonnald, with whom I have been living since I received your last letter in which you approve of my joining him, is a very kind and sincere fellow, he attends at the King's College, and he gives me a very strange account of the number of pupils who are attending the medical classes. A report was in circulation a few days ago that the professors would suggest to the shareholders the propriety of closing its doors for a few years, and again opening them with something fresh, but I do not think this advice will be acted upon. I hear the shares which were originally £100. each can now be bought for £25., or even less; but I am not at all surprised at this, for the shares of the London University College are only of five pounds more value than those of King's College. Macdonnald's habits are much more economical than mine, and al-

though, my dear father, I am satisfied from your considerate remittances you have every confidence in my prudence, yet as we of the Emerald Isle are too apt to calculate beyond our means, a curb like my friend Sandy Scott I look upon to be of the greatest advantage to me, particularly as he does every thing in a quiet, respectable, and steady way. Sandy's great grandfather, by the mother's side, was a distant relation of the Duke of Buccleugh, in consequence of which be sure when you speak of him in your letters to me not to forget always to call him SCOTT MACDONNALD, he is very particular about this; and though he is always upholding his great grand-father's dignity, yet he told a "good one" of him the other evening, he was very fond of the *Scotch toddy*, and the wags in Dalkeith always called him Mr. Sott, leavingout the C.

Sandy Scott has brought a host of letters of introduction and intends delivering them next week. Write soon, my dear father, and believe me,

As ever, your affectionate son,
THOMAS.

P.S.—Dont send me Tuson's plates they are to be had here very cheap. You have made a mistake about Mayo—it is not the celebrated Mayow who has been dead this length of time, but Herbert Mayo, who was professor at King's College and whose place is supplied by the celebrated Doctor Todd, about whom Sandy Scott knows every thing, as hedoes about most people here.

THE ANATOMIST.

MUSCLES.

HEAD.

Occipito-frontalis. *Origin,* two external thirds of superior transverse ridge of occipital bone and posterior external part of mastoid process of temporal bone. *Insertion,* integuments of eyebrows, nasal bones and angular processes of the os frontis.

MUSCLES OF EXTERNAL EAR.

Superior Auris. *O.* cranial aponeurosis above external ear. *I.* upper and anterior part of cartilage of the ear.

Anterior Auris. *O.* posterior part of zygomatic process and cranial aponeurosis. *I.* anterior part of helix.

Posterior Auris. *O.* mastoid process. *I.* back part of concha.

FACE.

Orbicularis palpebrarum. *O.* internal angular process of os frontis and upper edge of tendo oculi. *I.* nasal process of superior maxillary bone and inferior edge of tendo oculi.

Tensor tarsi. *O.* posterior edge of os unguis. *I.* lachrymal ducts as far as puncta.

Corrugator supercilii. *O.* internal angular process of os frontis. *I.* middle of eyebrow.

Pyramidalis nasi. *O.* occipito—frontalis muscle, descends along nasal bones. *I.* compressor nasi muscle.

Compressor nasi. *O.* canine fossa in superior maxilla. *I.* dorsum of nose.

Levator labii superioris alæque nasi. *O.* upper extremity of nasal process of superior maxilla, and from edge of orbit above infra-orbital hole. *I.* ala nasi, upper lip and orbicularis oris muscle.

Zygomaticus minor. *O.* upper part of the malar bone. *I.* upper lip, near commissure; sometimes wanting.

Zygomaticus major. *O.* lower part of malar bone, near zygomatic suture. *I.* angle of mouth.

Levator anguli oris. *O.* canine fossa above aveola of first molar tooth. *I.* commissure of lips and orbicularis oris.

Depressor labii superioris alæque nasi. *O.* alveoli of canine and incisor teeth, of superior maxilla. *I.* integuments of upper lip and fibro-cartilage of septum and ala nasi.

Depressor anguli oris. *O.* external oblique line on lower jaw, extending from anterior edge of masseter to mental foramen. *I.* commissure of lips.

Depressor labii inferioris. *O.* side and front of lower maxilla, above its base. *I.* half of lower lip and orbicularis oris.

Levator labii inferioris. *O.* alveoli of incisor teeth of lower jaw. *I.* the integuments of the chin.

Orbicularis oris surrounds the mouth by two fleshy fasciculi.

Buccinator. *O.* two last alveoli of superior maxilla and external surface of posterior alveoli of lower maxilla, also inter-maxillary ligament. *I.* commissure of lips.

MUSCLES OF LOWER JAW.

Masseter consists of two portions: *Anterior portion.* *O.* superior maxilla where it joins malar bone, and inferior edge of latter. *I.* outer surface of angle of lower jaw.

Posterior portion. *O.* edge of malar

bone and zygomatic arch, as far as glenoid cavity. *I.* external side of angle and ramus of lower jaw.

Temporal. *O.* side of cranium, beneath semicircular ridge on parietal bone, temporal fossa, and aponeurosis. *I.* coronoid process of inferior maxilla to last molar tooth.

Pterygoideus internus. *O.* inner side of external pterygoid plate and pterygoid process of palate bone. *I.* inner side of angle of jaw and rough surface above.

Pterygoideus externus. *O.* outer side of external pterygoid plate, crest on great ala of sphenoid bone and from tuberosity of superior maxilla. I. into anterior and internal part of neck of lower jaw, interarticular cartilage, and inferior synovial membrane.

MUSCLES ON ANTERIOR AND LATERAL PARTS OF NECK.

Platysma-myodes. *O.* cellular membrane covering upper and outer part of deltoid and great pectoral muscles. *I.* chin ; fascia along side of lower jaw ; and fascia covering parotid gland.

Sterno-cleido mastoideus. *O.* upper and anterior part of first bone of sternum and sternal third, sometimes half, of clavicle. *I.* upper part of mastoid process and external third of superior transverse ridge of occipital bone.

Sterno-hyoideus. *O.* posterior surface of first bone of sternum, cartilage of first rib, sternal end of clavicle, and sterno-clavicular capsule. *I.* lower border of body of os hyoides.

Sterno-thyroideus. *O.* posterior surface of first bone of sternum and cartilage of second rib. *I.* oblique line on ala of thyroid cartilage.

Omo-hyoideus. *O.* behind semilunar notch in scapula, from the ligament which passes over the notch, and from base of coracoid process. *I.* lower border of os hyoides, at the junction of its body and great cornu.

Digastric. *O.* groove, internal to mastoid process. *I.* rough depression on inner side of base of jaw, near its symphysis.

Mylo-hyoideus. *O.* mylo-hyoid ridge of inferior maxilla. *I.* base of os hyoides, chin, and middle tendinous line common to it and its fellow.

Genio-hyoideus. *O.* inner side of chin, above the digastricus. *I.* base of os hyoides.

Hyo-glossus. *O.* cornu and part of body of os hyoides. *I.* side of tongue.

Genio-hyo-glossus. *O.* eminence inside chin, below frœnum linguæ. *I.* mesial line of tongue from apex to base, and body and lesser cornu of os hyoides.

Lingualis consists of fasciculi of fibres, running from base to apex of tongue, and lying between the genio-hyo-glossus, and the hyo and stylo glossi.

Stylo-hyoideus. *O.* outer side of styloid process, near its base. *I.* cornu and body of os hyoides.

Stylo-glossus. *O.* styloid process, near its tip and the stylo-maxillary ligament. *I.* side of tongue, as far as the tip.

Stylo-pharyngeus *O.* back part of root of styloid process. *I.* side of pharynx, cornu of os hyoides, and thyroid cartilage.

MUSCLES OF THE PHARYNX.

Constrictor pharyngis inferior. *O.* side of cricoid cartilage, inferior cornu, and posterior part of ala of thyroid cartilage. *I.* with its fellow, along mesial line on back of pharynx.

Constrictor pharyngis medius. *O.* cornu and appendix of os hyoides, also stylo-hyoid and thyro-hyoid ligaments. *I.* mesial tendinous line, and cuneiform process of occipital bone.

Constrictor pharyngis superior. *O.* petrous portion of temporal bone, lower part of internal pterygoid plate and hamular process of sphenoid bone, also intermaxillary ligament, posterior third of mylo-hyoid ridge, and side of base of tongue. *I.* cuneiform process of occipital bone and mesial line of pharynx.

MUSCLES OF THE PALATE.

Levator palati. *O.* petrous portion of temporal bone in front of foramen caroticum. *I.* broad, into the velum.

Tensor, vel circumflexus palati. *O.* depression at root of internal pterygoid plate, spinous process of sphenoid bone and fore part of Eustachian tube ; tendon turns round hamular process. *I.* into velum, meeting its fellow in the mesial line.

Motores uvulæ, *O.* posterior extremity of spine of palate bones. *I.* cellular tissue of uvula.

Palatoglossus. *O.* inferior surface of velum. *I.* side of tongue.

Palato-pharyngeus. *O.* inferior surface of palate. *I.* side and back of pharynx, and superior cornu of thyroid cartilage.

LARYNX.

Thyro-hyoideus. *O.* oblique ridge on

ala of thyroid cartilage. *I.* lower edge of cornu of os hyoides.

Crico-thyroideus. *O.* fore part of cricoid cartilage. *I.* lower border of thyroid cartilage.

Thyro-arytenoideus. *O.* posterior surface of thyroid cartilage, near its angle. *I.* anterior edge of arytenoid cartilage.

Crico-arytenoideus lateralis. *O.* upper edge of side of crocoid cartilage. *I.* base of arytenoid cartilage.

Crico-arytenoideus posticus. *O.* depression on posterior surface of cricoid cartilage. *I.* outer side of base of arytenoid cartilage.

Arytenoideus fills the interval between arytenoid cartilages, and consists of two arrangements of fibres: *oblique,* run from apex of one cartilage to base of opposite one; *transverse,* are attached to posterior surface of each cartilage.

DEEP MUSCLES ON ANTERIOR AND LATERAL PARTS OF THE NECK.

Longus colli. *O.* bodies of three superior dorsal and four inferior cervical vertebræ, intervertebral ligaments, head of first rib, and anterior tubercles of transverse processes of the four inferior cervical vertebræ. I. fore part of first, second, and third cervical vertebræ.

Rectus capitis anticus major. *O.* anterior tubercles of transverse processes of four inferior cervical vertebræ. *I.* cuneiform process of occipital bone.

Rectus capitis anticus minor. *O.* transverse process of atlas. *I.* cuneiform process of occipital bone.

Rectus capitis lateralis. *O.* transverse process of atlas. *I.* jugular process of occipital bone.

Scalenus anticus. *O.* anterior tubercles of transverse processes of third, fourth, fifth, and sixth cervical vertebræ. *I.* upper surface of first rib, near its cartilage.

Scalenus medius. *O.* posterior tubercles of transverse processes of four or five inferior cervical vertebræ. *I.* upper edge of second rib.

Scalenus posticus. *O.* posterior tubercles of two or three inferior cervical vertebræ. *I.* upper edge of second rib between its tubercle and angle.

THORAX.

Pectoralis major. *O.* sternal half of clavicle, anterior surface of sternum, cartilages of third, fourth, fifth, and sixth ribs, and from aponeurosis common to it and external oblique muscle. *I.* by a flat tendon into anterior edge of bicipital groove, and by an aponeurosis into fascia of forearm.

Pectoralis minor. *O.* external surfaces and upper edges of third, fourth, and fifth ribs, sometimes from second. *I.* inner and upper surface of carocoid process of scapula.

Subclavius. *O.* cartilage of first rib. *I.* external half of inferior surface of clavicle.

Serratus magnus. *O.* by eight or nine fleshy slips, from eight or nine superior ribs. *I.* base of scapula.

Intercostales are twenty-two in number on each side: eleven *internal* and eleven *external.*

External. *O.* inferior edge of each rib, commencing at transverse processes of vertebræ. *I.* external lip of superior edge of rib beneath, extending to behind costal extremities of cartilages.

Internal. *O.* at sternum from the inner lip of lower edge of each cartilage and rib as far as angle. *I.* inner lip of superior edge of cartilage and rib beneath.

Levatores costarum. *O.* extremity of each dorsal transverse process. *I.* upper edge of rib below, between tubercle and angle.

Triangularis sterni. O. posterior surface and edge of lower part of sternum and ensiform cartilage. I. cartilages of fourth, fifth, and sixth ribs.

MUSCLES OF THE BACK.

First Layer.

Trapezius. O. internal third of superior transverse ridge of occipital bone, ligamentum nuchæ, and spinous process of last cervical and all dorsal vertebræ. I. posterior border of external third of clavicle and acromion process, also superior edge of spine of scapula.

Latissimus dorsi. O. six inferior dorsal spines, and by lumbar fascia from all lumbar spines, from back of sacrum, posterior third of crest of ilium, and from three to four inferior ribs. I. posterior edge of bicipital groove of humerus.

Second Layer.

Rhomboideus minor. O. lower part of ligamentum nuchæ and two last cervical spinous processes. I. base of scapula, opposite to and above its spine.

Rhomboideus major. O. four or five superior dorsal spines. I. base of scapula from spine to inferior angle.

Levator anguli scapulæ. O. posterior tubercles of transverse processes of four

or five superior cervical vertebræ. I. vertebral margin of scapula, between spine and superior angle.

Serratus posticus superior. O. ligamentum nuchæ, and two or three dorsal spines. I. second, third, and fourth ribs, external to angles.

Serratus posticus inferior. O. two last dorsal and two superior lumbar spines. I. lower edges of four inferior ribs anterior to angles.

Splenius colli. O. spines of third, fourth, fifth, and sixth dorsal vertebræ. I. transverse processes of three or four superior cervical vertebræ.

Splenius capitis. O. spines of two superior dorsal, and three inferior cervical vertebræ and ligamentum nuchæ. I. posterior part of mastoid process, and occipital bone, below its superior transverse ridge.

Third Layer.

Sacro-lumbalis. O. posterior third of crest of ilium, oblique and transverse processes of sacrum, sacro-iliac ligaments, and transverse and oblique processes of lumbar vertebræ. I. all the ribs, near their angles.

Longissimus dorsi. O. posterior surface of sacrum, and transverse and oblique processes of lumbar vertebræ. I. all dorsal vertebræ, and ribs between tubercles and angles.

Spinalis dorsi. O. two superior lumbar and three inferior dorsal spines. I. nine superior dorsal spines.

Musculi accessorii. O. superior edge of each rib. I. tendons of sacro-lumbalis.

Cervicalis descendens. O. from four or five superior ribs, between tubercles and angles. I. transverse processes of fourth, fifth, and sixth cervical vertebræ.

Transversalis colli. O. transverse processes of five or six superior dorsal vertebræ. I. transverse processes of three or four inferior cervical vertebræ.

Trachelo-mastoideus. O. transverse processes of three or four superior dorsal vertebræ, and as many inferior cervical. I. inner and back part of mastoid process.

Complexus. O. transverse and oblique processes of three or four inferior cervical and five or six superior dorsal vertebræ. I. into occipital bone, between its two transverse ridges.

Fourth Layer.

Spinalis colli. O. extremities of transverse processes of five or six superior dorsal vertebræ. I. by four heads into spines of second, third, fourth, and fifth cervical vertebræ.

Semi-spinalis dorsi. O. by five or six tendons, from transverse processes of dorsal vertebræ, from fifth to eleventh. I. extremity of spines of two inferior cervical and three or four superior dorsal vertebræ.

Multifidus spinæ. O. first fasciculus arises from spine of vertebra dentata, and is inserted into transverse process of third, each successively in a similar manner down to the last, which arises from the spine of last lumbar vertebra, and is inserted into false transverse process of sacrum.

Interspinales—are situated between spinous processes of vertebræ.

Intertransversales—attached and situated as their name implies.

Rectus capitis posticus major. O. spinous process of second vertebra. I. inferior transverse ridge of os occipitis.

Rectus capitis posticus minor. O. posterior part of atlas. I. occipital bone, behind foramen magnum.

Obliquus capitis inferior. O. spinous process of second vertebra. I. extremity of transverse process of atlas.

Obliquus capitis superior. O. upper part of transverse process of atlas. I. occipital bone, between its transverse ridges, posterior to mastoid process.

UPPER EXTREMITY.

Shoulder Arm.

Deltoideus. O. lower edge of spine of scapula, anterior edge of acromion, and external third of clavicle. I. rough surface on outer side of humerus, near its centre.

Supra-spinatus. O. all scapula above the spine, which forms supra-spinous fossa, and from fascia covering muscle. I. upper and fore part of great tuberosity of humerus.

Infra-spinatus. O. inferior surface of spine and dorsum of scapula beneath, as low down as posterior ridge on inferior costa. I. middle of great tuberosity of humerus.

Teres minor. O. depression between the two ridges on inferior costa of scapula, from fascia covering it, and ligamentous septa. I. inferior depression on great tuberosity of humerus.

Subscapularis. O. all the surface and circumference of subscapular fossa. I. lesser tubercle of humerus.

Teres major. O. rough surface on in-

ferior angle of scapula, below infra spinatus. I. posterior edge of bicipital groove.

Coraco-brachialis. O. coracoid process and tendon of short head of biceps. I. internal side of humerus, about its middle, and by an aponeurosis, into ridge leading to internal condyle.

Biceps. O. short head, from coracoid process, long head, from upper edge of glenoid cavity. I. back part of tubercle of radius.

Brachialis anticus. O. centre of humerus by two slips on either side of insertion of deltoid, and fore part of humerus to its condyles. I. coronoid process of ulna and rough surface beneath.

Triceps extensor cubiti. O. long head, from lower part of neck of scapula and inferior costa. Second head, from ridge on humerus, below insertion of teres minor. Third head, from ridge below insertion of teres major, leading to the internal condyle, and from internal intermuscular ligament. I. olecranon process of ulna, and fascia of forearm.

Forearm and Hand.

Palmaris brevis. O. annular ligament and palmar fascia. I. integuments on inner side of palm.

Pronator radii teres. O. anterior part of intenral condyle, fascia of forearm, intermuscular septa, and coronoid process of ulna. I. outer and back part of radius, about its centre.

Flexor carpi radialis. O. inner condyle and intermuscular septa. I. base of metacarpal bone of index finger.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

May 9,

Dr. Bright, President.

A short communication from Dr. Bostock on the subject of the analysis of three specimens of urine, from a patient under the care of Mr. Earle, with rheumatism, who was treated with mercury. The author describes the first portion examined before the commencement of the mercurial course as the most aqueous he had ever seen, its solid contents being only 1·33 per cent., and the earthy salts being scarcely perceptible. After 13 days' use of mercury, the solid contents were increased to nearly 2 per cent., of which there was about the natural proportion of the healthy phosphates. After a further interval of 11 days, the solid contents were increased to 4 per cent., and the phosphoric salts were greatly increased in quantity. In a specimen of the blood of the same patient, which the author received with the first specimen of urine, he found on analysis a quantity of urea.

Remarks on the Malignant Diseases of the Skin and of the Face. By Mr. Cæsar Hawkins.

The object of the author's communication is to describe a peculiar form of malignant disease of the face, which does not appear to him to have received any distinct notice by surgical writers, although its character is so well marked as to require a separate consideration. The term "malignant disease," however, having been employed in a very vague and ill-defined manner, the author commences by stating that he restricts the term *malignant* to such diseases as essentially possess a new structure, capable of exerting a poisonous influence in one or more of these several degrees—1st, upon the neighbouring textures, which are converted into a substance exactly similar, or at least analogous to that of the new formation; 2ndly, upon the absorbent system, so that the next glands become enlarged into a tumour, like that originally deposited, or 3dly, upon the whole constitution, so that the poisonous secretion of the newly formed part gains access to the circulating fluids, and tubercles of various forms, but of the same or analogous character, become developed in some distant organs or textures, which have no direct communication except through the blood with the parts in which the new structure was first formed. By this restriction of the term, the author excludes from among the malignant diseases of the face; 1st, the irritable and intractable ulcers, described by Mr. Earle in the 12th volume of the transactions of the society. 2ndly, the various forms of scrophulous lupus, which attack the nose, eyelids, and cheeks, and 3rdly, the several varieties of tubercular sebaceous disease, tubercular lupus, noli-me-tangere, &c., which occur in the same parts, and 4thly, hypertrophy of the nose, described by Mr. Hey, Civadier, and others. None of these contain any new structures to entitle them to be included in his definition. The author then proceeds to describe these distinct forms of malignant disease, which are illustrated by several drawings, casts, and

preparations, presented to the examination of members of the society. With the *common cancer of the face*, as it shows itself in the lower lip, most surgeons are familiar. When removed by the knife in its early stage, this disease does not return; if permitted, however, to advance until the contiguous glands become affected, the patient usually falls a victem to the irritation of the disease. In a few of these cases the poison is absorbed, contaminating the whole system, in which case tubercles are found in the liver and other viscera.

The second form of disease to which the author applies the name of *cancerous ulcer*, or phagedenic ulcer, occurs in the face of old persons, is usually stationary for a long time, until excited to ulceration by some accidental violence, and differs from the ulcer of ordinary cancer, by the skin around not being thickened and inflamed; by the almost entire absence of pain; by its slow progress, and other characters. This disease the author considers to be malignant only in the lowest degree, and advises its removal by the knife, or when the new substance is not very deep, by the chloride of zinc. To the 3rd form of the disease, the author employs the name of *cancerous tumour of fungous cancer of the face* of old persons, a disease which he believes to be hitherto undescribed. This disease presents the appearance at first of a small round tumour in the skin, generally in the cheek over the malar bone, or on the ala nasi. It is a little whiter than the surrounding cutis, being thinned by the growth of the tumour. It is easily distinguished from ordinary cancer by many characters of peculiarity, and is usually unattended with lancinating pain, previously to ulceration. When it forms upon the ala nasi, it is readily distinguished from hypertrophy of that part by the absence of surrounding redness and thickening, by its defined cyst-like limits, and by the absence of enlarged sebaceous follicles.

The author considers the disease to be intermediate in malignancy between the cancerous ulcer, and the common cancer, and that if sufficient care be taken to excise the whole, it may be removed with almost certainty of success.

The President asked, if in the symptoms any peculiarities arise from the mode of growth or the structure of the malignant tumours of the face.

Mr. Hawkins could not satisfy himself that any peculiarity existed in the progress of formation of these tumours, which he had termed schirrous and fungoid.

Mr. Perry wished to know from Mr. Hawkins, whether in cancer scroti, the liver, kidneys, or any internal viscera, were subject to contamination, and whether the enlargement of the inguinal glands was unfavourable towards an operation, for Mr. P. had seen cases where the operation was performed under those circumstances, when the enlargement disappeared soon afterwards.

Mr. Hawkins had not had an opportunity of examining many fatal cases of cancer scroti, and had not seen any morbid lesion in the internal organs; but he referred to a case of Mr. Laugstaff, ably described in the transactions of the Society. Such cases were unusual. Mr. Hawkins would not regard the enlargement of the glands as a bar to the performance of the operation.

Mr. Macilwain wished to elicit from Mr. Hawkins some account of the constitutional symptoms which present themselves in those cancerous diseases. It happened to Mr. M., in the course of 16 years, to have six or seven tumours under his observation, which it was impossible to distinguish from carcinomatous formations. An operation in these cases was about to be performed, but during the delay occasioned by some accidental circumstance, they got quite well, and no one he observed would conclude these to be cancerous. He was once struck with a case of cancer of the lip in Bartholomew's Hospital, where an operation was also about to be performed, but owing to some slight delay, the case completely got well by the use of arsenic employed locally. In the treatment of these cases he has found more relief obtained by directing remedies to the constitutional symptoms than to any of the local ones; and the most common and, perhaps, constant general symptom in these cases, is an unusual excitability of the nervous system, not dependent on the disease, but existing prior to the symptoms of the disease in question.

REMARKS ON A PECULIAR SYMPTOM OCCURRING IN SOME CASES OF ENLARGED LIVER, BY I. G. MALCOLMSON, ESQ. SURGEON, MADRAS ESTABLISHMENT.

The object of the author of this paper is to describe a condition of disease in the liver, which he had observed to be productive of a peculiar sound as heard through the stethoscope. This sound was between a crepitous rattle and a

bleating, audible to the patient and even to the by-stander, and accompanied by a vibration of the parieties of the chest, communicated to the hand applied to the part. The author was at first unable to account for this symptom, but subsequent experience has enabled him to refer it to enlargement from abscess in the liver, or other abdominal tumour, compressing and forcing upwards a portion of the lung. In one instance the patient amused himself by producing, and removing by various changes of posture, what he (being a surgeon) had taken for intimation of approaching death. In a subsequent part of the paper, the author lays much stress on the danger of opening abscesses in the liver, before adhesion shall have taken place.

MEDICO-BOTANICAL SOCIETY.

May 10, 1837.—*Earl Stanhope, President.*

Twenty-Seven Years' Retention of Power by the Howary Poison.—This evening Mr. Iliff detailed some experiments which he had made with the howary poison, brought by Dr. Hancock from Guiana in 1810, and mentioned in the last report from this Society. The object of the experiments was not to determine by what mode poisons act on the system, but simply to ascertain whether the specimens of the howary arrows, prepared at least twenty-seven years since, still maintained their virtues. For this purpose, he dipped the tip of one of the arrows in warm water, and quickly withdrew it, and inserted it into the thigh of a rabbit; the effect was very slight; there were some twitches of the muscles, but the animal shortly after recovered. Another arrow, soaked for the space of two minutes, until the poison was fully moistened, was then inserted into the thigh of the same rabbit, and the animal became paralysed, and died in a few minutes. This experiment was repeated on another animal, in which it produced great quickness of respiration, convulsive twitches, and death, in the course of a few minutes. In this instance it was also found necessary to well moisten the point of the arrow. Some of the poison scraped off, and introduced by the mouth with the food, had not the slightest effect. In one instance in which the poison was inserted into the thigh, it retained its influence over the animal for some hours, but the rabbit eventually recovered. It was, Mr. Iliff said, probable that, in this instance, the poison was not sufficiently applied. The two last facts were interesting, as showing the necessity of an abraided surface for the development of the action of the poison, and also the recovery of an animal, after remaining under its influence for several hours. The latter effect, he believed, had also been noticed by Dr. Addison, in his experiments with the howary poison. Mr. Iliff thought that the publication of the experiments which he had made might produce benefit, by preventing individuals from giving poisoned arrows away, however long they had been kept, without sufficient precaution.

LONDON MEDICAL SOCIETY.

May 15, 1837.—*Mr Bryant, President.*

ANEURISM OF THE ARCH OF THE AORTA. SUDDEN DEATH FROM FUNCTIONAL DISEASE OF THE HEART.

Mr. Hooper exhibited a specimen of aneurism of the arch of the aorta, which had burst into the pericardium. He had been called to see the patient just as he had suddenly expired, and not having attented him before, he could only obtain the following history of his case:—He was forty-five years of age, and two months since had suffered from an attack of influenza, which left many of the symptoms of dyspepsia behind it, with occasional difficulty of breathing, and a rising in the throat, resembling the globus hystericus. For these symptoms he had been in the habit of consulting a physician, who considered the affection to be dyspepsia. On the day on which he died, he felt the difficulty of breathing coming on as he was walking out, and took soda-water for relief; as he was drinking the second bottle he fell down suddenly, and died immediately. On examination, an aneurism of the arch of the aorta, which had burst into the pericardium, was detected. The pericardium contained a clot of blood, weighing about a pound. The lungs, the liver, and the other viscera, were healthy.

Dr. Bennett related a case of sudden death from what he considered to be a functional disorder of the heart. The patient, a man, forty-one years of age, had generally enjoyed good health, but during the last five or six years had been subjected to great mental distress, and

for five or six months past had suffered from symptoms of dyspepsia, not of an urgent character, which did not lay him up, and only induced him to apply for medical advice occasionally. On Sunday he rose as well as usual, and ate a hearty dinner, at two o'clock; between four and five o'clock he was seized with great pain in the epigastrium, and a sense of constriction across the chest, with pain and contraction of both arms. He had suffered from pain in the left arm before. He took brandy and water, but gradually got worse. At seven o'clock a medical man was sent for, and on his arrival in a very short time afterwards, he found that the patient had been dead, apparently, for twenty minutes. On examination, the body, externally, was muscular; the neck and face were livid. The *chest* was remarkably large and well formed; lungs not collapsed, but gorged with blood in every part. There were some old adhesions of the pleuræ. *Pericardium* healthy; *heart* flattened, flabby, and somewhat enlarged; a quantity of fatty matter was at its base. Its cavities displayed nothing particular, but there was a slight hypertrophy and dilatation generally. Coronary arteries healthy. *Stomach* distended with partially-digested food. Intestines and brain healthy. He (Dr. B.) believed that the heart was subject to variety of functional diseases, which might cause death, without the presence of any apparent lesion.

Dr. Whiting inquired whether the patient might not have been suddenly attacked with severe peripneumonia? He thought this more probable than that the heart was in fault in the present instance.

Dr. Bennett said, that there were no symptoms which could be attributed to peripneumony. Such general engorgement of the lungs was against the presumption of the presence of peripneumony; the sudden functional disease of the heart would, however, account for this symptom.

EPILEPSY, AND FUNCTIONAL NERVOUS DERANGEMENTS.

Dr. Uwins being now called on for his announced paper on this subject, stated that he should have had more reluctance in breaking into the course of discussion which the narration of Dr. Bennett's case might lead to, did he not feel that the few remarks which he had just put together, and now held in his hand, had an especial bearing upon the same principle as that which Dr. B. advocated, namely, that a vast deal of morbid condition often existed without any cognizable change in structure. Functional disorders, (the Doctor went on to say, in his paper,) were the disorders to which he was desirous of directing the attention of the Society at this time, because it was of such maladies as epilepsy, and all its numerous alliances, that we might rightly predicate that they had neither "local habitation" nor "name." He objected, *in toto*, to the very principle itself of classification and nomenclature, and hailed the approach of that æra in medicine when it should be studied and cultivated, as now are the collateral sciences of anatomy, physiology, and surgery. He had recently, he said, been hearing some masterly lectures on the spinal and cranial brain, and so different were they from the cutting and slicing and piecemeal demonstrations which were wont to be exhibited, that he could not avoid, for the time, wishing that the period of his own youth and pupillage had been postponed to the present day. "It is," Dr. U. went on to say, "because medicine still retains the barbarisms and crampings of these scholastic methods of designation and definition, that it has not made the same progress as physiology and surgery. But it will not long be thus obstructed. The wheel-drags are fast being loosened, nosology is vanishing into the nothingness out of which it originated, and the theory and practice of our art are about to assume a novel and commanding aspect." He then attacked the principles which referred all functional lesion to vascular change as its *primum mobile*. "Inflammation!" he exclaimed, "where is the inflammation in that inmate of a madhouse, who is raving to a terrific excess? Where, in that melancholic, who, in the corner of his apartment, is muttering to himself in the most incoherent manner; or in that epileptic who lies on the floor exhibiting direful contortions and convulsions? What evidences of inflammation do we find in the stertorous and insensible apoplectic, in the laughing, weeping, singing, and bawling of hysteria? No, all these affections are but manifestations of irregularity in cerebral energy,—of this faculty and function being in a condition of morbid activity, while others are as morbidly passive, or quiet." He had no wish at the present moment "to touch upon the brink of all that was hateful" in the minds of many of his respected compeers; but

he felt assured that to homœopathy and to phrenology would the practice and theory of our art henceforth find itself most indebted. He did not mean to deny that many discoveries had been made by experiments on animals; he admitted that to Le Gallois were we beholden for having discovered many functional peculiarities about the regions of the cerebellum and medulla oblongata; that to Wilson Philip were we obliged for his manifestation of the faculties resident in the eignth pair of nerves; to Charles Bell and Mayo for demonstrating the absolute origin of the nerves of motion, as different from those of feeling; to Magendie for some insight into the distinctive functions of the fifth pair; but to those physiologists and pathologists were we still more indebted who, at vast pains and labour, had, by observation alone, detected the laws of life, and discovered the elements of morbid being.

Having thus traced out the errors of the old pathologists, the Doctor made especial reference to epilepsy as appearing to have considerable connexion with those parts where the cranial and the spinal brain make their junction. He alluded to the doctrine of Boerrhave as being substantially correct, and referred to two experiments, the one by the late Dr. Fothergill, of electricity having both suspended and immediately afterwards restored an animal to life; and the other by Mr. Sewell, related in Mr. Mayo's "Pathology," in which a horse having a locked-jaw was killed by poison—or, at least, both life and the disease were suspended,—and restored to animation by inflation of his lungs; in which last experiment, as well as in the first, Dr. Uwins seemed to suppose that electric energies were brought into play. The paper was concluded by several corollaries, which mainly bore upon what the author seemed to have principally in view during the whole of the reading,—viz., that a due and especial regard in all our reasonings should be paid to the laws of organism; that then symptoms should be registered, nosology banished, and practice (directed by the teachings of disturbed orgazm) established on its ruins.

Dr. Shearman considered that two of the assertions made by Dr. Uwins had not yet been proved, namely, that to various portions of the brain various functions should be allotted, or that nosology was established on nonentities, for it gave name to an assemblage of symptoms which were evidences of the disease. For instance, who ever saw jaundice without the *cutis flava*, and that was one of the symptoms on which the name was founded?

Mr. Jones was fully of opinion that many cases occurred in which the symptoms preceding death were not indicated by examination afterwards. He thought, however, that the opinion that all diseases were of this character, was erroneous.

Mr. Kingdon agreed with Dr. Uwins, that nosology was badly founded. Indeed, after twenty-five years' practice, he had never seen an assemblage of symptoms which bore out the name of the disease. When a student in the hospital, he had never been able to get a physician or surgeon in those institutions, when pressed hard, to give a name to a disease.

The debate was here adjourned.

HOW TO STOP BLEEDING.

The *Revue Medicale* states, that when all other means fail in arresting hæmorrage, a little oil of tobacco has immediately succeeded. That which collects in the stems of pipes which have been long smoked will answer perfectly. The discovery was made by Humel, a chemist, at Berlin, and his mixture is eight ounces of distilled water, two drams of oil of tobacco, and a few drops of ethereal animal oil. This has been found so effectual, that, by a recent decree of the Minister of the interior at Munich, all apothecaries are ordered to keep it prepared.

PRESERVATION OF ANIMAL SUBSTANCES.

M. Gannal, of Paris, has discovered, that a solution of the acetate of alumina injected into the arteries of a dead body will preserve it for a long time. This is also applicable to the preparation of specimens of natural history. It will enable the anatomist to pursue his labours with comfort at all seasons of the air, and even without the aid of the chlorides of lime or soda.

CHLORIDE OF ZINC AS A REMEDY FOR NÆVUS MATERNUS.

Mr. Calloway, of Guy's Hospital, has lately applied chloride of zinc, like a piece of caustic, to nævus maternus, at repeated intervals, until the skin became slightly discoloured. It has been attended with considerable success. It has also appeared useful in some cases of lupus.

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXV.

ETIOLOGY.

Predisposing Causes of Disease—Habit of Body—Typhus and Synocha—Four Different Kinds of Plethora—Apoplexy—Diseases of Summer and Winter—Individual and National Constitutions—The Plague, Yellow Fever, and Sudor Anglicanus—Climate and Diet—Diseases of Hot and Cold Countries—Diseases of the Skin, Liver, Lungs, and Kidneys—Diseases of the Rich and of the Poor—Exciting Causes—Ancient and Modern Opinions—Balance of the Fluids—Humoral Pathology of Phlegmon, Erysepelas, Scirrhus, and Dropsy—Bad Humours and Ill Tempers—Pathology of the Arabians—Vitiation of the Fluids—Hoffman and Cullen—Fluidists and Solidists—Peccant Humours—Explanation of Dr. Brown's System—Direct and Indirect Debility—Sthenic and Asthenic Diseases—Errors of his System—His Good Pathology and Bad Practice—Changes of the Blood in Different Diseases—Cause of the Buffy Coat—Sir Everard Home, on Colourless Globules, with coloured Envelopes—Holland on the Blood in Inflammation—Parr on Scrofula—Blood in Scurvy, Diabetes, Gout, Phthisis, and the Exanthemata—Acid and Alkaline Blood—Albuminous Blood—Diseases not propagated by the Blood—Home's Experiments on Innoculation—Hydrogen and Carbon in the Blood—Spontaneous Combustion—Cyanosis, Cynanche Trachealis, Rachitis, and Exostosis—Heat and Cold—Analagous Effects of a Hot Iron and Frozen Mercury—Air—Pressure of the Atmosphere—Influence of its Changes on Diseases—Range of the Barometer—Medical Use of the Diving Bell—Mode of killing Whales—Pain in the Tympanum, in Rarefied Air—Moisture in the Air—Effect of Odours and Putrid Effluvia—Deleterious Gases—Smoke and Dust—Contagion and Infection—Difference between them—Marsh Miasmata—Mode in which they act on the System—Sir Astley Cooper's Experiment—Latent Stage of Diseases—Aliment—Poisons—Acrid Poisons—Corrosive Poisons—Narcotic Poisons—Habitual Use of Poisons—Poison-proof Persons—Narcotic Acrid Poisons—Indian and American Poisons—Astringent Poisons—Poisoning with Lead—Septic Poisons—Difference between a Venum and a Virus Venom of the Rattle Snake—Virus of Hydrophobia—Venomous Reptiles—Poisonous Fishes.

4. *Habit of Body.*—It is not climate and diet that are the predisposing causes of disease, though they are often said to be so, but the habit of body induced by them. The equilibrium of the functions is only maintained in temperate climates. People are more subject to typhus in hot countries, and synocha in cold, from the greater plethora which exists in the latter. This plethora may be divided into four species:—1. Plethora vera. 2. Plethora ad molem, where the blood swells within its vessels. 3. Plethora ad spatium, where the vessels contract on the blood. 4. Plethora ad vires, where the propelling strength is lessened. In winter, we are more liable to apoplexy, owing to the alternations of temperature to which we are then subject; and, in consequence of which, the plethora ad molem and the plethora ad spatium, are constantly encountering each other. In summer, we are liable to the plethora ad molem only; for we cannot make ourselves cold then, though we can make

ourselves warm in winter. Apoplexy, therefore, is less frequent in summer.

There is such a thing as a national, as well as an individual constitution. It generally displays itself in exempting natives from those diseases to which foreigners arriving in the country are liable. Thus, it protects the Turks at Constantinople from the plague, and the natives of the West Indies from the yellow fever. But, sometimes, this constitution predisposes to disease, as in the case of the sudor Anglicanus, which spared all foreigners in England, and attacked Englishmen abroad. It was the same with the plague at Copenhagen, and with fever at Basle, in Switzerland.

Climate and diet have great influence in producing that habit of body which predisposes to disease. In hot countries the skin and the liver are more liable to disease, and the lungs and the kidneys in cold; because those parts have respectively more to do in a hot and in a cold climate. The liver is vicarious of the lungs, and the skin of the kidneys.

With respect to diet, excess in any particular kind of food predisposes to certain diseases, through the medium of the habit of body which it induces. The rich are less prone to contract diseases, but are more liable to sink under them.

II. *Exciting Causes.*—These consist principally of peculiarities in the stimuli to irritability, which, as we saw when treating on that subject, are either direct or indirect. The principal of them are heat, air, aliment, sympathy, and the passions. We shall treat of them in order, after giving a sketch of the ancient and modern systems of medicine, as founded on the supposed action of these exciting causes.

Health was anciently thought to consist in a *κρασις*, or balance of the four fluids of the body;—blood, yellow bile, black bile, and phlegm. A loss of this balance, (called *ακρασις*, or *intemperies*,) was of course thought to constitute disease. A phlegmon was attributed to a preponderance of blood; erysipelas, to that of yellow bile; scirrhus, to black bile; and dropsy to phlegm. This was the first humoral pathology, but was not founded on vitiation of the fluids. We still speak of "a bad humour," or "an ill temper."

Themison was one of the mechanists who attributed all diseases to strictum and laxum. The Arabians introduced vitiation of the blood. This was another humoral pathology. It continued even to the time of Cullen, and is still prevalent among the vulgar. Hoffman propagated the doctrine, that disease depended not on vitiation of the fluids, but on a disturbance of the molecular actions of the solids. Before him it was thought that the vis medicatrix naturæ (by whatever name it was known) sent out an army to repel the invasion of some "peccant humour" which had intruded into the system. If they caught the enemy, they boiled him ("coction of the humours,") and thus obliged him to depart in an abcess (abcedo). If, on the other hand, the enemy prevailed, gangrene was the result.

Brown said that all diseases depended on a loss of balance between the irritability of the system, and the stimuli to that irratibility. According to him, debility existed in every case; but was either direct or indirect. Indirect debility he attributed to increased stimuli, and the disease was then called sthenic. Direct debility was from accumulated excitability; and the disease was then asthenic. On these principles he explained the fact, that a hot iron and frozen mercury will produce the same effect. He was wrong in saying that a certain stock of irratibility was given to every man at birth, instead of its being continually renewed; and that this irritability was the same in all parts of the body; whereas it is different in every organ. He was also wrong in allowing his views of asthenic diseases (fever, for instance) to make him give stimuli, and forbid bleeding. He regarded the blood as a stimulus only; whereas it is also a load. He stimulated in all cases. He always whipped the horse; and we do so sometimes, as in ophthalmia; but we generally lighten the load also. He was probably the best pathologist and the worst practitioner that ever lived.

The blood is said to be vitiated in inflammation, scrofula, diabetes, the exanthemata, scurvy, gout, putrid diseases, &c. The blood is changed in these diseases, but probably only as an effect; for all exciting causes are supposed to act primarily on the nervous system.

In inflammation, the coagulum of the blood is finer than in health, and is buffed and cupped. The tunica coriacea, or buffy coat, has been said to be owing to the descent of the red globules of the blood, from its coagulating more slowly than in health. But if this were the case, the line of demarkation between the buffy coat and the other part of the co-

agulum would not be so well marked as it is. Again, if we draw a streak on paper with the blood, the buffy coat will be at the sides, and not on the surface. Beside, the coagulation of the blood is not slower, but quicker, in inflammation. The buffy coat may, perhaps, be owing to the quicker and firmer coagulation, which presses out the red particles; and thus quicker and firmer coagulation is owing to molecular changes. It was once thought to be from something mixed with the blood, and to be not the effect, but the cause, of the disease. Bleeding was therefore ordered again and again, to get rid of it. It consists, as Sir Everard Home says, of globules of lymph, divested of their colouring envelope; and which swim from their less specific gravity. Holland says there is more oxygen in the blood in inflammation, owing to the expirations predominating over the inspirations.

In scrofula, according to Parr, the blood is too albuminous; and, according to others, too acid and stimulating. Hence soda was given. In scurvy it was thought to be too alkaline; and hence acids were given: but a cabbage will cure scurvy as well as acids.

In diabetes there is said to be too little nitrogen in the blood, so that it does not form urea in the kidneys, but sugar. There is no sugar in diabetic blood, though it was once thought there was. In gout there is thought to be too much nitrogen, and lithic acid abounds.

There is no proof of vitiation of the blood in exanthematous diseases; for we cannot communicate them by innoculation with the blood. Home endeavoured to prove that they could be so communicated. He scarified the arm of a person affected with measles; dipped cotton in the blood, and applied it to the nostrils of another person. The latter took the disease; but no doubt some of the secretion from the skin was also taken up by the cotton, and the person inhaled the miasm.

Phthisis has been referred to excess of oxygen in the blood; and gout to a deficiency. Spontaneous combustion has been attributed to an excess of hydrogen; and cyanosis to an excess of carbon. There has been said to be too much fibrin in cynanche trachealis, because a fibraneous membrane lines the trachea; too much acid in rachitis; and too little in exostosis. This doctrine is dying a natural death.

We now come to a consideration, in detail, of the exciting causes of disease.

1. *Caloric, and its abstraction.*—Cold can never cause a primary contraction of the blood vessels. It first produces a collapse, to which excitement and contraction succeed; but if the cold be very great, life may not be supported till reaction occurs.

2 *Air.*—A change in the density of the surrounding air, is said to cause hæmorrhage and asthma. The range of the barometer (three inches) makes a difference in the pressure of the atmosphere on a man's body, of four thousand pounds out forty thousand. Carson suggested a descent in a diving bell, as a cure for phthisis; but the patient he sent down, was killed by hæmorrhage on coming up, the manner in which whales are killed, illustrates the influence of a difference in density of the surrounding medium. When struck, they dive to great depths; and on coming up, blood spouts profusely from every wound. If a great and sudden change take place in the density of the surrounding air, great pain is felt in the tympanum, from the expansion or compression of the air contained in it; which causes severe pressure either from within or from without, on the membrana tympani. This is experienced in ascending a high mountain or rising in a balloon; and from an opposite state of the surrounding air, in going down in a diving bell. Changes in the moisture of the air do not affect diseases *per se*; but they do from the difference of temperature which they occasion. Atmospheric air generally contains five grains of water in a cubic foot. Moist air is favourable in phthisis because less stimulating.

Odorous particles in the air can only cause syncope. Putrid effluvia are not deleterious, unless by exciting disgust; in which case they act through the medium of the passions. Contagious miasmata are positively deleterious; putrid effluvia (as proved by Chisholm and Bancroft) only indirectly so.

Deleterious gases may cause asphyxia, either by closing the glottis (as all stimulating gases do), or by entering the lungs; where they are inert, but exclude respirable air. The latter comprehend oxygen, hydrogen, nitrogen, the protoxide of nitrogen, and carbonic oxide; all the others belong to the first class. Recoveries are more frequent after exposure to the first class, than after inhaling the second; and therefore carbonic acid is less fatal than carbonic oxide.

Smoke and Dust are said to produce asthma, bronchial calculi, or phthisis, and ophthalmia. Those are liable to such diseases who work in dusty places; as dry-grinders, needle-makers, chimney-sweepers, and flax-carders.

With respect to contagion and infection, the first (according to Baillie) comprehends the diseases which are communicable from one person to another; while the latter affects several persons together; infection is the consequence of the general state of the air, and not of communication from one person to another. An epidemic may belong either to one class or to the other. Typhus fever seems to belong to both. Scarlet fever, measles, small-pox, syphilis, hydrophobia, &c., are contagious, from vitiated secretions. Intermittent fever arises from infection.

Contagious miasmata have no sensible properties. Fontanelle and Mescati analized marsh miasmata, and the contageous effluvia of the plague and fever; and found their composition the same as that of pure air. They have been said to contain various gases, hydrogen being the chief ingredient; but we can form all the combinations of hydrogen, and yet we cannot produce miasms. The latter are derived from vitiated secretions of animals and vegetables, and cannot be imitated in the laboratory. The decomposition of organized matter never produces them: they come not from dead but from diseased and dying animals and vegetables. Hence it is more dangerous to open a body recently dead, than after a longer period; because the secretions are not yet decomposed. The poison of the viper has the same composition as gum arabic,—the most bland substance in nature; and therefore we are not to be surprised if we detect nothing peculiar in the analysis of miasmata.

With regard to the absorption of these miasmata, the lungs, the stomach, and the skin, are said to be the avenues by which it takes place. The lungs are the most likely, their surface being greater than that of the stomach or skin; the access of air to them more frequent; and the absorption from them more rapid. Sir Astley Cooper inclosed all his body except the head, in vapour of turpentine, and found that his secretions were not affected; but a single whif of air loaded with this vapour, taken into the lungs, made the secretions smell of turpentine. It is questionable whether such vapours and miasmata may not act without being absorbed at all; by causing a primary irritation, which is propagated by sympathy. No doubt many substances are absorbed; but it is doubtful whether this is necessary. When a mother communicates variola to the fœtus, it is thought to be through the medium of her vitiated blood; but in another case the fœtus may become affected with variola while the mother remains free from it. Here it must be through the medium of miasmata, and probably is so in the former case.

Marsh miasms increase the liability of those who suffer from, to imbibe the same diseases afterward; but all other infectious matters lessen the subsequent liability. If this were not the case, a patient would hardly recover in a fever hospital. But his disease has lessened his susceptibility to the surrounding contagion. This is probably from exhaustion of irritability. In the same way, in the case of those diseases which affect a person only once in the course of his life, this subsequent immunity appears to be from the loss of irritability of certain tissues. He may be liable to other diseases, in the same way as a person who has a diminished irritability of the nose for snuff, is as sensible as ever to ammonia, and various odours. The specific irritability is lessened, but the general irritability remains unimpaired.

The latent stage of contagious diseases is that period of the excitement of the blood vessels which precedes their collapse. Its length varies in different diseases, and in different instances of the same disease. Some contagions act at once; others, after several days. Small-pox, by innoculation, takes effect in seven days; but if taken naturally, it requires fourteen. It is less violent in the former case, owing to the collapse being less after the shorter excitement. The sooner catarrh comes on after exposure to its cause, the slighter it will be, and the sooner over. A pinch of a sarum applied to the nostrils produces a long excitement, during which it appears to have no effect; but the collapse which succeeds is proportionately violent. A blistering plaster acts the moment it is applied to the skin; but we do not feel it till the collapse of the vessels takes place, for then the blood presses on the nerves.

3. *Aliment.*—Excess of food leads to apoplexy, gout, angina pectoris, asthma, polysania, calculi, and inflammations of various kinds. Deficiency of food ex-

poses to diabetes, dropsy, and all the diseases arising from debility.

Poisons may be divided into six classes:—1. Acrid. 2. Corrosive. 3. Narcotic. 4. Narcotico-acrid. 5. Astringent. 6. Septic. They produce catarrh, cholera, jaundice, apoplexy, palsy, tetanus, and various other diseases, as we shall see more particularly when we come to enumerate them in detail.

1. *Acrid.*—This class includes oxalic acid, elaterium, colycinth, and all strong purgatives. They act vitally, producing inflammation.

2. *Corrosive.*—These act chemically, destroying the part to which they are applied. They comprehend all mineral acids, alkalies, and salts, except those of lead.

3. *Narcotic.*—These produce stupor; as opium, hydrocyanic acid, &c. In former times, only narcotic poisons were known; and it is only in those times that we meet with stories of persons who could not be poisoned. No doubt, however, the habitual use of poisons lessons the susceptibility of the system to their influence.

4. *Narcotico-acrid.*—They produce inflammation as well as stupor. This class comprises belladonna, hyoscianus, conium, tobacco, and all the poisons which produce tetanus; such as urari, bruca, arsenic, secale cornutum, strychnia, arnica, rhus tox-icodendron, upas artiar, ignatia amara, menispermum cocculus, &c.

5. *Astringent.*—The salts of lead furnish the only examples of this class. They act by constricting the muscular fibres.

6. *Septic.*—To this class belong sulphurated hydrogen, poisonous fish, and all venoms and viruses. The difference between a venom and a virus is, that the former is a natural secretion designed for the use or protection of the animal, like the poison of the rattle-snake, or the wasp; whereas the latter is a morbid secretion, the consequence of disease, or the poison of hydrophobia. The principal venomous animals are the coluber berus (viper), the apis mellifera (bee), the nespa (wasp), the gnat, and the scorpion. Orfila mentions the boa constrictor; but it probably kills only by constriction. The principal poisonous fish are the mybilus marinus, or muscle; the balistes, or old wife; the coryphæna, the perca major, the scomba maximus, the yellow-billed sprat, and other West Indian fish. The diseases which these septic animals produce are urticaria, catarrh, jaundice, cholera, and at last palsy, and nervous apoplexy. When fatal, it is generally through the medium of the last. Sulphuretted hydrogen is not poisonous, unless introduced into the blood. When it does harm, therefore, in any other way, it is through the medium of the passions, from the disgust which it excites owing to its disagreeable odour, and its being the result of putrefaction.

LECTURES ON SURGERY,

BY

JOHN HUNTER, F.R.S.

ORGANIZATION AND ACTION.

General Views of Organization and Action—Arrangement of matter into certain Forms to answer the End required—Formation of Organs—Organs arranged according to certain Laws constitute Animals—Organization and Life distinct foom each other Mr. Hunter's own Case—Of the second, Digestion, circulation, and Respiration are most closely connected with the first—Others, as Motion of the Limbs, more distantly—Motion may be caused by elastic Forces, reacting as in Ligaments—Nutrition and Absorption—Arteries, Veins, and Absorbents.

From what I have already said, it must appear that original or common matter has been first so decomposed, and then again so combined, as to become animal matter. This animal matter next became so arranged as to become alive. Now I shall observe that these combinations and arrangements are differently modified, so as to produce the various kinds of animal substances; some of which have their parts so disposed as to have motion among themselves, as muscles; others to have sensation, as brain and nerves; and in others the living parts are so disposed as to acquire other properties, as elasticity, rigidity, &c.

Solidity, in a certain degree, is necessary for self-motion; for parts cannot produce motion in one another without some resistance or fixed point of motion. We therefore find the acting parts of an animal composed of solids, or the parts which compose them could not coalesce together by the attraction of cohesion; and it is necessary that it should be so, as

without this no determined action could be produced.

Now we have gone so far with the materials of an animal, let us next examine how these materials are disposed so as to form an animal. These materials may now be considered in a mechanical point of view, like the component parts of a machine, each of which has its destined use and own peculiarity of form. These are united with each other to form parts, the whole forming organs of various kinds to produce the mechanical effects required. These organs, again, united according to certain established rules, form animals. This compounding of animal matter is what should be understood by organization.

Now if this idea of organization is just, organization and life are two different things; for, according to this definition, a dead body is as much organized as a living one, for in the dead body the same mechanism exists as in the living one.

Organization, then, comes nearest our ideas of the mechanical formation of parts, and the ultimate effect must be mechanical; for it is impossible to produce motion in matter without having a mechanical effect.

Having considered simple life, and the general idea of what is called organization, I shall next consider *the Actions of an Animal.*

I have said that animal matter is so constructed as to be endued with a power of self-motion, as in a muscle; and as we can hardly conceive any part of an animal entirely passive or free from motion, since all parts grow and are nourished, we must suppose this muscular structure very universal in an animal body, though this power has been considered principally in regard to muscles, properly so called, whose actions are plainly visible to the eye.

The different circumstances necessary for the composition of a muscular fibre, with the mode of action of a muscle, I shall not touch upon, the field being too large for my present purpose. I shall only observe that they are the animal powers by the immediate actions of which every, even the smallest part, of an animal is moved.

Every machine has its power; a clock has either a spring or weight, and so on. In mechanics the parts are dependent on one another, so that some *one* power is necessary to put the whole in motion; in mechanics too there is commonly but one ultimate effect produced, whereas in an animal body there are a thousand. The powers therefore of an animal body are differently placed and circumstanced from what they are in an inanimate machine: it is not one power that is setting the whole to work, because if that were the case an animal's actions would always be the same, but he is at rest in one part, moving in another, and so on; and as this is the case, he must have power in every part, so that his powers are diffused through the whole animal, which is almost composed of powers.

The actions of an animal, considered as a whole, should be divided into two kinds. 1st. Those actions common to every part alike, such as those which are employed in the internal operations of the machine, as growth, alteration, building up, taking down, &c., every individual part (the smallest conceivable) acting for itself only, which actions may be called immediate. These are probably performed by the ends of vessels, whether the terminations of arteries or the beginning of absorbents; and the actions of the brain are likewise of this kind. 2nd. Those actions which are of whole parts, and which vary according to their composition or construction, being employed chiefly respecting other matter, not for the immediate use of themselves, as in those above mentioned, but still absolutely necessary for the first. These actions are of whole parts, as the stomach, heart, organs of respiration, organs of sensation, mind and will. That these actions differ from the first is evident, because the organs in which they are found have also the first, and are indebted to the first for their existence, in the same way that the first are indebted to the second for their continuance: the stomach, lungs, heart, and other organs of life, may be said to be continually supplying materials with which the first are employed in building and repairing the system. The second kind may be called labourers, being subservient to the first, which, as being engaged in laying down and taking up parts, may be called the bricklayers. It is the first which compose the movements of the true animal, being those which are immediately employed about itself. It is the operations of these which properly constitute the animal œconomy, and it will be these which I shall principally consider.

The whole of the first kind of actions are involuntary, the will having no power over them, the mind being not even con-

scious of them, although it has, involuntarily, considerable influence over them, under circumstances of diseased and irregular action. Most of the actions of the second kind are subservient to the first, and are absolutely necessary to the continuation of their existence. These have therefore a certain degree of regularity, and according to the relationship or immediate necessity of the second to the first, are these second permanent and constant; indeed, we seldom find in them any intermission, perhaps never in health; though, in disease they are sometimes stopped. There have been instances where the motion of the heart has ceased, and also the involuntary action of breathing:—this once happened to myself.

I had the gout in my feet three springs successively, and missed it the fourth. In the fifth spring, one day at ten o'clock in the forenoon, I was attacked suddenly with a pain nearly about the pylorus: it was a pain peculiar to those parts, and became so violent that I tried every position to relieve myself, but could get no ease. I then took a tea-spoonful of tincture of rhubarb, with thirty drops of laudanum, but still found no relief. As I was walking about the room, I cast my eyes on a looking-glass, and observed my countenance pale, my lips white, and I had the appearance of a dead man looking at himself. This alarmed me. I could feel no pulse in either arm. The pain still continuing, I began to think it very serious. I found myself at times not breathing; and being afraid of death soon taking place if I did not breathe, I produced a voluntary action of breathing, working my lungs by the power of my will. I continued in this state three quarters of an hour, when the pain lessened, the pulse was felt, and involuntary breathing began to take place. During this state I took madeira, brandy, ginger, and other warm things; but I believe nothing did any good, as the return of health was very gradual. About two o'clock I was able to go about my business.

Here, then, was a suspension of the most material involuntary actions, so much so that the involuntary action of breathing stopped, while sensation and all the voluntary actions were as strong as before.

Quære: What would have been the consequence if I had not breathed? At the time, it struck me that I should have died; but that most probably would not have been the consequence, because, most probably, breathing is only necessary for the blood when it is circulating; but as there was no circulation going on, so no good could have arisen from breathing.

The stomach appears to have been the seat of this affection. Affections of the stomach appear to have more influence on every part of the body than any other one part has on another; and this sympathy is reciprocal, for every part has a power of affecting the stomach, which shall be more fully treated of hereafter.

Of the second kind of actions, those which may be considered as having the nearest relationship to the first, are digestion, circulation, and respiration; these are all secondary actions of the machine. Those which are not so closely connected with the first, but respect more the actions of other parts of the same body, or what may be called remote parts of the animal œconomy, are the actions of muscles in moving the limbs, sensations, and voluntary actions employed on external objects, as progressive motion, mode of catching food, &c. We may just observe, that in a muscle itself, which has the power of moving other parts, we find the two kinds of actions; first, growth and support as in every other part; and, secondly, the action peculiar to the muscle itself. The first kind of actions arise immediately from the living principle, and have always been ranked as involuntary actions; the second are either involuntary, as the actions of whole organs,—the stomach, the heart, &c.—or are voluntary and dependent on the will, as common muscles, &c.: but these last I shall leave till I have spoken of the brain and nerves.

Besides this action in parts, which I have said is confined to muscles, there is another mode of action introduced, that of parts having the living principle which yet have not a power of self-action like muscles; these are the elastic ligaments.

The elasticity of these parts does not depend on life, for it exists equally in dead as in live parts. Ligaments are employed to assist muscles in keeping certain parts in their places, the position of which is long continued. They may be considered as producing a secondary action in the machine. These are more common in some parts in some animals than in others; such as the neck of quadrupeds, especially those with long necks, as the camel; and on the abdomen of some animals, as the elephant: this power is also introduced in the vascular system.

There are other parts introduced into

the machine which possess no action that can affect any other part, but have a kind of passive use in the machine. These vary in their consistence according to the uses made of them, some being extremely firm, as bones, tendons, &c., which sustain the actions of different parts of the animal, and without which it could not subsist; others are less firm, and are employed in uniting the various parts as cellular membrane.

From all that has been advanced, we see that by the juxtaposition or union of living parts organs are formed, which gives us the first mode of action, and the form of bodies gives the secondary mode. By the union of these various parts compound motion is produced. In this manner the whole of the most complicated animal machine is produced. The power of self action which animal and vegetable matter possesses, distinguishes it from matter endued with any other properties than life, and also distinguishes living from dead matter.

Of the Stomach.—Every animal body, however compounded, must have the means of support, especially as it is by gradual increase to complete its own magnitude. To this end the living parts fitted for preparing nourishment are thrown into the form of a bag, which is adapted for retaining the food; and this bag is endued with the power of secreting a matter which has the property of converting many vegetable, and all animal, substances into a honegenious matter. This part is called the stomach, and in the less perfect animals it not only makes a considerable part of the whole animal in respect to size, but also in respect to its use in the machine, being the most considerable part of the whole. It may be considered as the first part of an animal, always becoming more and more simple as the animal becomes more simple; and also as the animal becomes more perfect, becoming proportionately the larger part of the animal.

The stomach is the distinguishing part between an animal and a vegetable; for we do not know any vegetable that has a stomach nor any animal without one. It is the converter of the food by hidden powers into part of ourselves, and is what may be called the true animal, no animal being without it; and in many, perhaps in most, it is what constitutes the principal part of an animal. A polypus is little more than stomach. An animal can exist without any senses, brain, or nervous system, without limbs, heart, or circulation, in short, without any thing but a stomach. But for the continuance of the species you must have parts of generation; and a polypus is a stomach and parts of generation in one; and the complicating an animal is no more than adding other parts for various purposes. To one animal which has a brain and nervous system, you have ten thousand without them.

The power and operation of digestion is perhaps as curious a part of the animal œconomy as any whatever; at present, however, it is not for me to explain these operations, but it is necessary for me to take some notice of the connexion between this viscus and the animal œconomy in general; in doing which we shall find it to be as much the seat of universal stimulus and irritability as the brain is of sensibility. This connexion, as in the case of sensibility, is much greater in some parts than in others: the connexion that all the vital parts have with the stomach is much greater than between the others, which may be called voluntary, which is only saying in other words that the connexions among the vital parts is more immediate than between the vital parts and those which are not vital.

In diseases the brain seems to be intimately connected with the stomach, and *vice versâ*. It was as necessary for the stomach to be connected with the whole body as for the brain, although not in so marked a manner; but that it is as immediately connected with the body as the brain we may certainly assert. The affections of the stomach with the body are not so strong as those of the brain, the mind being made sensible of the least injury done to a part, while the stomach is not at all affected under many partial injuries of the body.

The stomach is more affected from the internal œconomy of the animal than from external influence, which is the reverse of the brain; for external influence in general can only be local, and local injury does not affect the stomach unless it be previously disturbed, or unless the injury is in certain parts, as the brain, the testes, and many of the vital organs, which, as I observed, have a more intimate connexion with the stomach.

The strongest natural affections of the stomach, as respects the body, are those connected with nutrition. These are of the greatest consequence in the machine, and may be said to be of two kinds, namely, want, and the contrary. Want

has often been known to produce madness: the contrary may be divided into two kinds,—repletion, and the want of health rendering nourishment unnecessary; and under such circumstances of the machine it is refused to be taken in. Perhaps repletion may be only a negative affection of the stomach with the body; the other is a positive one, and is often carried so far as to produce a sensation in the stomach, namely, sickness.

The stomach is affected by injuries in parts of the body which have no connexion with nutrition, and more especially with parts which have the least action in the machine. Although it may be difficult to understand why it should happen, yet we find that the stomach is more readily affected by injuries done to tendinous parts, and those which have little sensibility, than by injuries of muscular parts, especially of muscles under the control of the will. This is very remarkable in strains of tendons and ligaments.

The stomach is no less connected with the brain in the internal operations of that viscus concerning external objects or mental operations than in cases of real injury done to that part. A man cannot hear a horrible story or behold distressing circumstances but he will often experience sickness, vomiting, or purging, especially the latter.

The Vascular System.—In many animals, especially the more perfect, the nourishment, or whatever is taken into the system, is taken up and carried from the stomach to the heart, and from thence is thrown out to all parts of the system, through tubes; and from the system it is again returned to the heart by other tubes or vessels. It is absolutely necessary for the surgeon to have a tolerably clear idea of the operations of these vessels. The teaching of the structure and offices of these different vessels more properly belongs to the anatomist than to the surgeon; but as there is one use of the absorbent vessels not generally known, and which is of great importance in many local diseases, and has also an immediate connection with the original formation of the body, it will be necessary that I should explain this: at present, however, I shall do so but slightly, and trace the action more at large in speaking of local diseases. For the better understanding the whole action of the absorbents, it will not be improper to give a short sketch of the vascular system.

An animal body has in general been considered under the idea of an hydraulic machine, because it appears to be almost wholly composed of tubes in which fluids move. I shall not at present enter into all the different opinions concerning the uses of these tubes, especially of that system called arteries; how they are variously affected, and how they produce their various actions, according to the different stimuli either of health or disease; but shall only give some general ideas of the most important uses of the three different sets of vessels, namely, arteries, veins, and absorbents.

Arteries.—These carry the blood from the general reservoir, the heart, to all the different parts of the body; the veins return it to the heart. The arteries constantly dispose of a part of the fluid which they contain in the different operations of the body, according to the different functions of the parts: adding to the whole where growth is necessary; making up losses where the whole is either improper or destroyed; and throwing out of the direct line of motion parts of that fluid, which, according to the different affections and actions of these arteries, become considerably altered in the process: this is called secretion.

Juices so secreted are intended for various purposes in the machine; some for stimulants, as the bile; some for mechanical purposes, as the tears, synovia, saliva, &c.; some for a store of nourishment, as the fat, &c.; while others are thrown out of the body as useless, because they have already performed all their purposes, as the urine, &c.

Veins.—The other set of vessels, the veins, are considered as less active, being principally employed in bringing back the red part of the blood, after it has lost its most salutary parts, or done those offices, whatever they are, for which it was sent out. This, of carrying back red blood, was not considered as the only office of the veins; many of their beginnings were supposed to arise, not from the terminations of arteries, but from most if not all the surfaces of the body, internal and external: making so many inlets into the general system, and bringing matter into the common mass of fluid for the support of the whole, and also to bring back many of the parts secreted by the arteries from the blood for the different purposes of the machine, such as synovia and lubricating fluids of all kinds; which fluids, having answered their different purposes, and having become unfit for every other use in the

machine, were obliged to be brought back again into the circulation, to be changed in the lungs and again thrown out of the circulation by the arteries.

Absorbents.—Such were considered to be the uses of the veins before the discovery of the lacteals; but by the discovery of these they were deprived of part of their supposed offices, namely, that of absorbing the chyle; still they were thought to absorb matter from the cavity of the intestines for the secretion of bile. The other part of the absorbent system, called the lymphatics, though long known, was not in the least suspected of performing the operation of absorption, but was still supposed to be the terminations of the extreme ends of the arteries, not large enough to carry red blood but only serum or lymph; though from their similarity to the lacteals, which were known to be absorbents, it became at last evident to common sense that they must absorb.

Before this idea was started, the general opinion of the vascular system ran thus. The arteries were supposed to carry blood for nourishment, secretion, &c. throughout the machine; the veins to return the red blood, as also to absorb from every surface of the body; the lymphatics to return the lymph or blood which came along the arteries: and the lacteals to absorb part of the chyle from the intestines.

But some experiments which I made to ascertain whether the veins of the mesentery absorbed, proved that they had not the power of absorption. I do not suppose the veins, even in an erection of the penis, to have the power of absorption; but I consider the corpora cavernosa as veins through which the blood is constantly flowing from the arteries, and that other veins carry off the blood from the corpora cavernosa: that in erection there is a spasm on the extremities of these veins, which prevents the blood from flowing into them, in consequence of which an accumulation and distension takes place, which causes an erection, and this ceases with the spasms on the veins. By tying the veins of a dog's penis, I found I could cause an erection at pleasure, while the arteries continued free. Now, therefore, the offices of the three systems of vessels were as follow. The arteries remain as before; the veins reconvey the blood to the heart, for a continuance of the actions of the arteries as before, but have lost their supposed power of absorbing; the absorbents alone are employed to take up whatever is to be carried into the circulating system. Now let us consider what are the substances always allowed to be absorbed. 1st., Extraneous matter, in which is included nourishment. 2nd, Secreted, superfluous and extravasated matter, whether natural or diseased. 3rd, The fat. 4th, That portion of parts which, being absorbed, causes the waste of parts, as muscles becoming smaller, bones lighter, &c. Although these two last effects were perhaps not expressly said to be carried on by absorption, either by the veins or the other system of vessels, yet we must suppose it was understood.

So far the absorbents have been considered as an active part in the animal œconomy; but, from a further knowledge of these vessels, we shall find that they are of much more consequence in the body than has been imagined, and that they are often taking down what arteries had formerly built up, thus becoming modellers of the body; and that they are also removing many diseased parts, which were beyond the power of cure.

As these vessels are productive of a vast variety of effects in the animal œconomy, which are very dissimilar in their intention and effects, they may be viewed in a variety of lights, and admit of a variety of divisions. We shall first consider them under two views. 1st, As absorbing matter which is not part of the machine. 2nd, As absorbing the machine itself.

The first is a well-known office of the absorbents, and is of two kinds; 1st, the absorption of exterior matter, in which may be ranked everything that is applied to the skin, as also the chyle. 2nd, The absorption of interior matter, such as many of the secreted fluids, the fat, the earth of bones, &c. It may be necessary to observe that I do not consider the fat and earth of bones as part of the animal, as they have no action within themselves, and have not the principle of life.

These actions of absorption are principally employed with a view to the nourishment of the animal, as also to answer many other purposes, as in the absorption of foreign matter, which is extremely extensive and is very important: for, besides its salutary effects, it is often the cause of a thousand diseases, epecially from poisons; all which are not to our present purposes.

The second office of the absorbents which we are to consider is that of removing parts of the body itself, which

may be of two kinds. The first of these is where only a gradual wasting is produced, either of the whole machine, as in atrophy, or of a part, as in the muscles of a leg or arm, from an injury done to a nerve, tendinous part, or joint: this I call interstitial absorption, because it is the removing a part of the body out of that part which remains, leaving the part still a whole or complete part; a muscle, for instance, that is wasted remains still a perfect muscle. The second is where the absorbents are removing whole parts of the body, and this may be divided into natural and diseased. In the natural, these vessels are to be considered as the modellers of the original construction of the body; and if we were to consider them fully in this view, we should find that no alteration can take place in the original formation of many parts, either in natural growths or in parts arising from disease, without the absorbents being in action to take a considerable part in it. This kind of absorption I shall call modelling absorption. If I was to consider this function in these lights, it would lead me to a vast variety of facts, as extensive as those connected with any principle in the animal œconomy, for bones cannot be formed without it, nor probably many other parts.

A part which was of use in one stage of life, and becomes entirely useless in another, is removed. This is evident in many animals: the thymus gland is removed, the ductus arteriosus and membrana pupillaris are removed. This process is perhaps more remarkable in the changes of insects than in any other animals. The changes in an insect are very curious. The insect is first a maggot or caterpillar, then goes into the chrysalis state, and comes out a butterfly. Whilst in the chrysalis state it is totally changed, the old parts are almost wholly taken up, and new parts formed: and it is this modelling process that occasions these changes.

Bones do not grow by having new particles put into the interstices of previously formed parts, so as to remove these to a greater distance from each other, by which means they should grow larger,—as, for instance, if I put a sponge into water, the water getting into all the interstices, makes it larger,—but they grow by the addition of new bone on the external surface.

I took a pig of a very large breed when young, bored two holes in the tibia, and put a shot into each, measuring on a card the distance of each from the other. I allowed this pig to grow up to its full size, then killed it and took out the bone, and I found the two holes at exactly the same distance from one another as at first. Now if the bone had grown in all its parts, these two shot would have been removed to a distance from each other proportionate to the growth of the bone.

This fact is also ascertained by feeding animals on madder at different intervals, by which means we shall get strata of red and white bone.

Since we know that bones do not grow by fresh matter being put into all parts, so as to push the old matter to a greater distance, but by new matter laid upon the external surface, let us see whether it is possible for bone to grow and retain its form without being taken down. We take the head of the thigh-bone of a fœtus. Now if the increase was accomplished by superimposed layers, one over the other, the head of the bone would necessarily become of an enormous size, and in time would come down so as to occupy the middle of the bone, while the cavity in the centre would not be enlarged. Absorption, therefore, must necessarily go on to keep the bone of its proper shape. Hence I call this the modelling process, for without this combined action of absorption and deposition the animal could not grow as it now does.

The absorbents possess the power of removing complete parts of the body, in consequence of disease, an operation which is somewhat similar to the first of this division, or the modelling process, but very different in the intention, and therefore in the ultimate effect. This process of removing whole parts, in consequence of disease, in some cases produces effects unlike what it produces in others, one of which is a sore or ulcer; in other cases no sore or ulcer is produced, although the whole part is removed. The first I call ulcerative absorption; but for the other I have not been able to find a term.

This process of the removal of a whole solid part of the body, or that power which the animal œconomy possesses of taking part of itself into the circulation by the absorbent vessels when necessary, is a fact that has not been in the least attended to, nor even been supposed possible; and as I now mean to give a general idea of it, I may just be allowed once more to observe, that the oil or fat of the animal, and the earth of bones, have always been considered as subject to

absorption, and some other parts of the body most liable to waste have been supposed to suffer by absorption; but that any solid part should be totally absorbed is a new doctrine. The use of the absorbents I have been able to demonstrate. The first hint I received of it was in the waste of the sockets of the teeth, and also of the fangs of the shedding teeth, which was in the years 1754 and 1755 (see Treatise on the Teeth, first and second parts.) This opinion was strengthened by what I observed in the process going on in the exfoliation of bones.

It may be difficult to conceive how part of the body should remove itself, but it is just as difficult to conceive how the body can form itself. They are both equally facts. The knowledge of their mode of action would perhaps answer but little purpose.

This, at least, I may assert, that when any solid part of the body undergoes diminution, brought on in consequence of disease, it is the absorbent system that has done it; the absorbents are the thieves.

The remote cause of absorption of whole and living parts implies the existence of two conditions, the first of which is a consciousness, in the part to be absorbed, of the unfitness or impossibility of remaining under such circumstances, whatever they be, and therefore they become ready for removal, and submit to it with ease. The second is a consciousness of the absorbents of such a state of the parts. Both these concurring, they have nothing to do but to fall to the work.

Now the part that is to be absorbed is alive, it must feel its own inefficacy and admit of absorption. The vessels must have the stimulus of imperfection of this part, as if they were sensible that this part were unfit; therefore take it up. There must be a sensation in both parts.

When the matter to be absorbed is a dead part, as nourishment and extraneous matter of all kinds, then the whole disposition is in the absorbents.

This is the only mode in which this power is capable of producing such effects, and, like all other operations of the machine, arises from either stimulus or irritation, all the other modes of destruction being either mechanical or chemical.

The knowledge of the use of the absorbent vessels is of late date, and the knowledge of their different modes of action still later. Physiologists have endeavoured to account for their modes of action on the principle of capillary tubes at their beginning, and this is the most common notion, because it is a familiar one. But this is too confined an idea for an animal machine; nor can it account for every kind of absorption. But as solids are often absorbed, as indurated tumours, coagulated blood, earth of bones, &c., they were driven to the necessity of supposing a solvent. This may or may not be so; it is one of those hypotheses that can neither be proved nor disproved, and must for ever rest as an opinion. My idea is, however, that nature leaves as little as possible to chance alone, and that the whole operation of absorption is performed by one action in the mouths of the absorbents.

But even under the idea of capillary tubes, physiologists were obliged still to have recourse to the actions of these vessels, to carry on the matter absorbed; therefore they might as well have extended the action to the mouths of the vessels.

As we know nothing of the mouths of these vessels, it is impossible we can form any opinion that can be relied on; but as they are capable of absorbing substances in a state of solidity and fluidity, it is reasonable to suppose that they have different modes of action; for although any constructton of parts that is capable of absorbing a solid may also be such as is capable of absorbing a fluid, yet I can suppose a construction capable of absorbing a fluid that is not fitted for the absorption of a solid, though this is not likely.

To see the possible correctness of this notion more forcibly, let us only recollect the variety in the mouths of different animals, and I will venture to say that the mouths of all the different animals have not a greater variety of substances to work upon than the absorbents have; and it may be observed, that with all the variety in the mouths of different animals, this variety is only for the purpose of adapting them to the forms of solids, which admit of great variety, every one being capable of absorbing fluids, which admit of no variety.

I have often said, on this point, that if we could see the mouths of these vessels, we might perhaps class the modes of absorption as animals have been classed, by their teeth, &c.

Matter taken into the constitution by the absorbents is capable of being altered in its nature from what it was out of the constitution. Although this may have

been conjectured or imagined, it never has been absolutely known, and even now the only proof we have of it is the change produced in venereal matter. If the matter of chancre or gonorrhœa be absorbed, it produces disease: this disease is not similar to the original; it is not pocky matter which is produced from the ulcers, but this matter has been changed from its original nature in the circulation; although the change was of such a kind as still to retain its power of stimulating and producing disease: but as it was changed, the disease produced was not similar to that from whence it came.

That there is a change in venereal matter is very evident, for if venereal matter out of the constitution be applied to a living part, it always produces an effect according to the nature of the part, which part may be of two kinds, either, 1st, a secreting surface, producing then gonorrhœa; or, 2nd, a non-secreting surface, producing then a chancre.

That this process of altering substances in the constitution is not a universal principle and common effect of all kinds of matter which enter the circulation, is evident; for we do not as yet know, for certain, of any other matter being altered.

TABLE OF ABSORPTION.

- Absorption connected with growth.
  - Absorption for nourishment.
    - Extraneous matter to become useful, as chyle, fat, &c.
    - Interstitial absorption of parts of the body itself, as cellular membrane, muscles, &c.
  - Absorption of useless, inconvenient, or hurtful parts.
    - Extraneous, that have been useful, as synovia and other secretions, become useless.
    - Parts of the body itself.
      - Producing wasting of a part, as a leg, an arm, &c.; or wasting of the whole body.
      - Absorption of the whole parts.
        - As modellers in the time of growth.
        - In consequence of weakness, as in the removal of calluses.
        - From parts becoming wholly useless, as the alveoli.
- Absorption in consequence of disease.
  - Interstitial absorption.
    - Partial wasting
      - of a leg, an arm, &c.; or of the whole body, as in atrophy.
      - of a callus, of a testicle.
    - Total wasting of calluses, alveoli, testicles, &c.
  - Progressive absorption.
    - As when pus or any extraneous body is brought to the skin,
    - In the process of exfoliation of bones.
    - In the process of sloughing.
    - In the formation of ulcers,
    - In the removal of the fangs of the teeth.

    — Attended with suppuration.
  - Mixed. As the progress of pus, tumours, &c. to the skin.

A PRACTICAL VIEW

OF

LYTHOTRITY:

WITH REMARKS ON

THE LATERAL OPERATION OF LITHOTOMY.

BY MR. ASTON KEY.

(Continued from page 237.)

Setting aside hæmorrhage, the injury inflicted on the neck of the bladder and prostate gland gives rise to the most formidable danger that attends lithotomy. In this respect it resembles lithotrity; for in both operations it is the violence done to the neck of the bladder that destroys the patient, in the majority of fatal cases. It is the manner in which the injury is inflicted that constitutes the danger. If we may judge from experience, the prostate gland would appear to sustain without inconvenience the effect of laceration: and this the experienced lithotomist bears in mind, in the act of extracting the stone. But contusion is most disastrous in its effects: it appears to cause sloughing, and diffuse inflammation of a destructive character in the neighbouring structures. In making the incision, and in extracting the stone, the object of the operator should be, to make a sufficient aperture to allow the stone to pass without bruising the gland; and not to carry

the knife too far laterally, so as to divide the deep perenial fascia, and thus expose the cellular basin of the pelvis. The knife, if used incautiously, exposes the patient to this danger. If the prostate be large, and the stone of considerable size, a large aperture is required; and if the substance of the gland be indurated, the lips of the incision do not yield. To obviate these inconveniences, the surgeon carries the knife more freely through the prostate, and thus adds to the risk of opening the deep fascia that of hæmorrhage from the arteries of the gland. Under these circumstances, I always look to the assistance which the blunt gorget affords, as obviating both the difficulties, without inflicting an injury of a serious kind upon the gland. This instrument, in the hands of the late Mr. Martineau, has had its merits fully tried; and its success is sufficient answer to any objection that can be urged against it. His object, in this part of the operation, was three-fold—to make a small incision in the gland with the knife; to enlarge the incision with the blade of the blunt gorget; and to take time in drawing the stone from the bladder. In so conducting the operation, the gland is not bruised, but torn: the slow introduction of the blunt gorget separates the fibres of the gland, and enlarges the incision as far as the deep fascia, without dividing it; for the fascia yields, and stretches, as the gorget enters the bladder. Sudden violence, in the act of introducing the gorget, is nearly as much to be deprecated as the violent extraction of the stone. The kind of violence which the blunt gorget, properly employed, inflicts, is well borne by the gland, and symptoms of high inflammation are rare, after such an operation.

The extraction of the stone is attended with more hazard to the gland. A nervous or a violent operator, feeling some resistance to his efforts, redoubles them, until he finds the stone obeying the force that he employs. If the opening in the gland be made with a cutting instrument alone, and be small, the stone is brought with difficulty into the incision, as the lips of the wound do not open. Additional force is then employed; and the operator, in ignorance of what he is doing, drags the gland before the stone, separates it from its attachment to the deep fascia, and brings it nearly to the external aperture before his efforts succeed. The consequence of such an injudicious proceeding is, to bruise the gland, to cause it to slough, and to render infiltration of urine almost inevitable, by the laceration of the deep prostatic connexions. The danger is, in part, prevented by the use of a broad blunt gorget, which enables the broad end of a large stone to enter the incision; and renders it obedient to the gentle but continued force of the surgeon. In this step of the operation, time must be given for the parts that embrace the stone to dilate: the muscular structure at the neck of the bladder, the firm substance of the prostate gland, and the deep fascia, will each stretch, and yield to the sustained efforts of a firm but gentle hand. In cases of enlarged and hard prostate, I have occasionally opened the incision while passing the forceps through the prostate, by separating the blades in a vertical direction: this, however, should be done without violence.

The gland is sometimes injured in withdrawing the stone, by the forceps embracing a portion of it, and tearing it away from the body. This accident happens when the central portion of the gland, or, as it is termed, the third lobe, is enlarged, and presents a narrow ridge at the entrance of the bladder. The forceps, where the blades diverge, close on this projection, as they embrace the stone; and the operator is unaware of it, until a piece of the gland is brought away in the blades. It may be avoided, by passing the finger below the forceps, and disengaging the gland from the forceps after the stone is seized. In my operations, I always pass the left fore-finger along the staff, after the knife is withdrawn; and reconnoitre the size of the incision, the texture and form of the gland, and situation of the stone. If the finger feels a projecting portion of gland that rises between the blades of the forceps as they are opened laterally, care should be taken to prevent it being entangled, by depressing it as the stone is brought forward. As soon as the stone enters the incision, the danger is past. I do not, however, wish to magnify the extent of this danger; for, in truth, it is less than might be expected. The injured portion is brought away, and not left to slough; and the surface from which it is brought is a lacerated wound, without contusion. In one case, that of an elderly gentleman, it happened to myself in operating; but the patient, after suffering for a few days with irritative fever, ultimately did well: and I have observed, in the few cases that have oc-

curred in the operations of other surgeons, that a slight degree only of fever, with fetid urine, has been the consequence, and in a few days has passed away. The neck of the bladder becomes slightly inflamed; but the incision prevents the ordinary severe effects of cystitis, by allowing the urine to drain away—an advantage that lithotrity does not possess.

The body of the prostate may receive injury from being grasped in the forceps, by the operator expanding the blades before they are fairly in the bladder. One blade slips beneath the lobe, while the other enters the bladder; and the operator, on closing them, thinking that they embrace the stone, uses considerable force in his attempt to extract it. The contusion and pressure which the gland undergoes are sufficient to induce inflammation, and, probably, some of its worst consequences.

In many, or perhaps most, of the fatal cases of lithotomy, inflammation of the peritoneum, investing the fundus of the bladder, is found to exist to a greater or less extent. In some few cases, it is of sufficient intensity to cause the destruction of life; but even where the mischief about the neck of the bladder is evidently of itself the cause of death, the peritoneum often partakes of the morbid action. This disposition of the peritoneum to participate in the inflammation of the perineal structure is not confined to the operation of lithotomy, but manifests itself in other operations on the perineum. In the opening of the membranous part of the urethra for stricture, where the cellular membrane and muscles of the perineum are divided, it is not uncommon to find the patient labouring, in a few days, under a sharp attack of peritonitis; and, in some instances, under a fatal form of the disease. The action appears to be propagated by the cellular membrane of the perineum to the peritoneum. On examination after death, the continuity of the inflammation, or at least its effects, cannot be discovered in the reticular tissue; but the most probable explanation of the frequent connexion between the morbid states of the two parts is the continuity of action. This is one source of danger to which the wound in the perineum exposes the patient.

Lithotomy is altogether free from the risk of leaving fragments in the bladder, where ordinary care is taken to examine the cavity, and to wash out whatever fragments may have been occasioned by the accidental breaking of the stone. If a fragment or two remain behind, they usually pass through the wound by the fourth day, when the tumefaction occasioned by incision has subsided; and clots of blood are rarely retained for any length of time. These often collect in the bladder, through the oozing from the prostatic vessels; but occasion sufficient irritation to induce the bladder to expel them. The patient may be rendered very uneasy after the operation, by a sense of distension in the region of the bladder, and of bearing down in the perineum; which continues until the repeated efforts of the bladder expel some small masses of coagula: or, if the distress be great soon after the patient is put to bed, and continues toward the evening, it is often found to arise from coagula obstructing the flow of urine; and the gentle introduction of the finger along the wound is followed by a copious discharge of urine mixed with coagula.

I will not omit the danger attending a wound of the rectum, though I cannot attach much importance to it. It appears to me, that undue importance is given to the accident. It is a very rare occurrence, so far as my experience extends. Among all the operations that I have witnessed, I have only once known the rectum to be be wounded, and then without the supervention of any untoward circumstance. It occurs usually, I apprehend, in making the second deep incision, in reaching the groove of the staff; or in dilating this incision after the groove is exposed. In doing this, the operator carries his knife more freely downwards, to divide the tranverse muscles of the perineum and the fascia that reaches to the levator ani; and if the rectum be distended with air or fæces, the knife may easily open it. When other sources of danger and irritation exist, such an additional evil adds to the aggregate of the danger; but, taken by itself, the wound of the bowel, occurring as it does close to the sphincter, is a matter of no serious moment.

The after-consequences of the operation of an untoward kind may be summed up in the accidents of fistula in perinæo, impotencey, and incontinence of urine. The first I have not witnessed as a consequence of the operation for vesical calculus. The operation of extracting prostatic calculi, when they are large and the gland diseased, is sometimes followed by difficulty in healing the external incision; and the formation of a fistula, through

which some drops of urine escape. But in lithotomy, the incision, being made through healthy structures, heals quickly, by a healthy process of granulation; and fistula is, therefore, a very uncommon occurrence. In a gentleman verging upon eighty years of age, whom I cut about three years since, an abscess formed in the prostate gland, and burst into the rectum. Benefit, rather than inconvenience, followed this; for the prostate, being very much enlarged, had obstructed the free escape of urine from the bladder, and partial retention often occurred: the aperture into the rectum remedied the difficulty, by allowing the bladder to empty itself more completely; and was otherwise of little inconvenience to him. The external wound healed in the usual manner. Impotency I have known to occur, in one instance: at least, it was attributed to the operation by the patient, who was otherwise a healthy person. Incontinence of urine rarely occurs in the adult, according to my experience. In the young subject, partial incontinence will sometimes occur, if the patient is allowed to leave his bed too soon after the operation, before the neck of the bladder is firmly healed, and the sphincter has recovered its tone. Instances, therefore, are met with, of young boys, who, if they retain their water inconveniently long, find it dribble away as they move about. In bed, the urine is perfectly retained. When they arrive at the age of puberty, the power of retaining it becomes increased.

The preceding sketch will serve to bring before the surgeon the several difficulties which surround lithotomy; and to remind him, that although, in the hands of English surgeons, it is a most successful operation, it nevertheless has dangers, for which he cannot be wholly prepared, and against which he cannot with certainty guard. Were it possible to foresee the occurrence of hæmorrhage, and its effects on the constitution of the individual—and, when it does occur, to arrest it with ease and certainty—the operation would be divested of one half of its risk. Or, if the causes of inflammation could be seen and warded off by any previous management, and all constitutional infirmity remedied, the lithotomist would have little to fear. But no experience, however great, can enable us to foresee the perils that suddenly arise, in the midst of apparent security. Judicious preparation of the patient, by regimen and medicine, may diminish his sensibility and disposition to inflammation; but the unexpected results of cases teach us that there are unknown causes in operation that prostrate the patient's powers, even when he appears to be in the most favourable state for the operation, and the utmost skill is employed in the performance of it. In the knowledge that we have of coming danger, the balance is much on the side of lithotrity.

In the observations that I shall make on lithotrity, I shall consider the circumstances that render it practicable, the mode of performing it, and the dangers attending it: and having described the several steps of the operation, I shall endeavour to lay down some rules to assist in determining which operation is more eligible, in each particular case.

To the discovery of the calculus in its earliest stage, I have already adverted, as one of the greatest benefits conferred by lithotrity; and the very first intimation of the presence of a stone in the bladder should not be neglected. The symptoms of its existence are too well known, and have been too often described, to require a repetition of them here. The previous occurrence of a nephritic attack, and the descent of a stone through the ureter, should lead us to look for some vesical symptoms occasioned by the attempt of a small calculus to enter the urethra. A stone, when it has descended into the bladder, is usually of very small size, and causes scarcely any noticeable sensation in the act of micturition; it often lies quiet in the base of the bladder for some weeks, until, by its continual presence, irritation is produced, and forcible and repeated efforts to expel it are made after each evacuation of the urine. The pain which the patient suffers results not so much from the contraction of the viscus on the stone, as from the force with which it is pushed towards the orifice of the urethra, and the consequent spasmodic action of the muscles at the cervix. Sometimes the stone becomes partly impacted in the orifice of the urethra, and gives the patient excrutiating pain, until the contraction of the bladder ceases, and the stone again falls back into its cavity. The sufferings in this way occasioned by a very small calculus are often greater than when the stone is larger, until inflammation arises at the neck of the bladder, and then the pain becomes much aggravated. A stone, when it first begins to occasion symptoms, is usually not larger than a small horse-bean; and the smallness of its size often occasions it to

elude an examination of the bladder, imperfectly or hastily conducted.

The operation of sounding has been rendered much more exact by the assistance afforded by Heurteloup's bed. Had this expert lithotritist contributed nothing else to the operation, lithotrity would be greatly indebted to him. The certainty with which the presence of a stone may be ascertained, be it ever so small, will not fail to strike a surgeon accustomed to the former inexact method of sounding. A common sound introduced into the bladder of an adult with a full-sized prostate gland can with difficulty be brought in contact with a small stone lying in the hollow of the bladder behind the gland, especially if there be a few ounces of water collected in the cavity. The convex part of the beak cannot, by any ingenuity, be so turned or moved in the bladder as to reach it; and the patient is pronounced to have not a stone until it increases in size, and acquires magnitude sufficient to meet the sound. The important period is thus lost; one seizure of a stone so small would be sufficent to crush it; but the imperfect manner of conducting the examination, in too many instances, leads the surgeon to form an erroneous opinion. These difficulties are wholly obviated by the lithotritic bed; which in addition to its utility in the operation of crushing the stone, enables us to detect its presence in the earliest stage, and even to ascertain its size with a great degree of precision. For the purpose of examination, the bladder should he neither quite empty, nor should it contain a large quantity of water. The former state is, of the two, the less objectionable; for the stone is sometimes met with at the entrance of the bladder, when the latter is empty; and its presence is at once recognised by a sharp tap against it, as the sound enters the bladder. But it is more desirable to have a small quantity of water in the bladder, as the stone can be both felt and examined as to its physical qualities. The inconvenience of a large quantity of water may be experienced in the following manner. If the patient lie on a sofa, and about two ounces of water be injected through the catheter, the stone will generally be felt at the lower part of the bladder, and its size and depth may often be pretty accurately ascertained: if two or three more ounces of water be injected, the stone sinks down into the base of the bladder, and its upper surface can alone be felt, and that imperfectly: if the quantity of water be increased by a further injection of three or four ounces more, the stone sinks wholly below the level of the instrument, and altogether eludes it. This arises from the peculiar manner in which the bladder dilates, as water accumulates in its cavity; of which I shall have occasion to speak more particularly. The operator may think, that the more water the bladder is made to contain, the more easy will be his examination; the motion of the instrument being more free in a large than in a small cavity. The quantity of water should, indeed, be sufficient to allow the short beak of the catheter to move freely, in a lateral direction: about three ounces will be sufficient in an ordinary bladder; but, in order to make the examination more satisfactory, the stone should be dislodged from behind the prostate, by suddenly inclining the patient backward, and altering the axis of the bladder: this is effected by the couch or chair.

(To be continued.)

The London Medical

AND

Surgical Journal.

Saturday, June 3rd, 1837.

THE METROPOLITAN UNIVERSITY.

The organization of the New London University is advancing as rapidly and as satisfactorily as could have been reasonably anticipated by its most ardent well-wishers. From the discordant elements of which the Senate was *necessarily* composed, it was fully anticipated, that the representatives of the corruptionists, who were admitted, though in a small proportion, into that body, would use all their efforts to oppose every measure which, from its liberality, would be likely to give general satisfaction to the public

mind, and thus encroach on the old rotten establishments. The pertinacious and inflexible opposition of Dr. Peter Mark Roget to every recommendation of Mr. Warburton, affords us a gratifying, though lamentable proof, of the forebodings which we ventured to predict of the conduct of that eminent physiologist, and no less distinguished philosopher. We had no hesitation in formerly stating that there were two distinct and very opposite opinions entertained, as to the propriety of electing Dr. Peter Mark Roget; at the same time, we were decidedly of opinion, that it would be of essential service, more particularly whilst the New University was in its infancy, to admit a few individuals, a chosen few, whose principles and conduct had ever been in direct opposition to those of the New Establishment, and, therefore, we considered Dr. Peter Mark Roget as an individual pre-eminently qualified to advocate the sentiments, and propound the doctrines of that sect, appropriately denominated ultra-corruptionists. In these hopes we have not been disappointed, and the meetings of the Senate of the New University have had ample testimony of his talents and zeal in the great cause which he has undertaken to support. In accomplishing his important projects, Dr. Peter Mark Roget has been ably assisted by only four partisans in his boldest measures, though, in those of minor importance, he had the co-operation of occasionally pliable and less determined characters. Besides, the learned Doctor of Laws, and President of the College of Bristol, the Roget Dilly contained as inside passengers Dr. James Clark, and Dr. Neil Arnott, whose naval tactics rendered them particularly useful in all arduous navigations.

There is no point on which Dr. Roget has more strenuously, and less successfully, combatted the measures of the enlightened members of the Senate, than in the opposition which he and his liberal phalanx have offered to the *open* manner in which business of the University was to be conducted; and it will be scarcely credited that the Secretary of the Royal Society made use of every argument to convince the Senate that all matters concerning the University should be executed by SECRET COMMITTEES. We cannot help expressing our opinion that the very proposal of such measures, and by such individuals, will have the most salutary effect; and that it is fortunate a member of the Senate should have been discovered, and been induced to have become one of its body, who had a sufficient quantity of moral courage to bring such monstrous propositions before the Council of a University established in the Metropolis of the British Dominions, in the year of our Lord ONE THOUSAND EIGHT HUNDRED and THIRTY-SEVEN.

However judicious the Chancellor of the Exchequer may have been, when selecting the different individuals who composed the Senate, and of making that selection from amongst those, not only different political, as well as religious creeds, but also of introducing some remnants of the old corruptionists; and, although, on reducing the list, the poisonous materials contained in it appear to form but a small proportion to the antidote which is introduced; yet an event has occurred which, though of minor importance, shows the necessity of watching with a vigilant eye every movement of the Roget Dilly. The medical profession will be astonished, though they may not altogether be disappointed, that in the selection of the members of the Medical Senate of the New University the name of Mr. Warburton has been excluded; an object which was attained by one of those

skilful manœuvres, which will occasionally take place, unless the fraudulent purposes of certain intriguing members of the Senate be not frustrated by the more liberal and enlightened members of this National Institution.

AN ADDRESS

DELIVERED TO THE MEMBERS OF THE

WORCESTERSHIRE NATURAL HISTORY SOCIETY,

ON THE OPENING OF THE

WORCESTERSHIRE MUSEUM,

SEPTEMBER 15, 1836.

BY CHARLES HASTINGS, M.D. F.G.S.

(Continued from page 232.)

We may pause a little to reflect on the character of Ray, who may be selected as one of a host of naturalists who considered it to be among the noblest ends of Natural History to generate in the mind of man love and veneration for the Creator, and admiration of the beauty and sublimity of his works. His "Wisdom of God manifested in the Works of Creation" was the first attempt ever made in the Christian era to confirm the truths of revealed religion, by facts drawn from the natural world. He was the friend and companion of Willughby, and their works were many of them carried on together. They were among the earliest Fellows of the Royal Society of London, a Society which may be said to have introduced the study of Natural History, as a science into England.

I might here dwell upon the labours of other naturalists, who, about this time, enriched the volume of Natural History; but it is impossible in this short sketch to do more than allude to the general results of the works of the most distinguished of them.

The most prominent of these stands the imperishable name of Linnæus, a man who, with some faults, possessed in so high a degree the intellectual and moral endowments which give dignity to man, that for ages yet to come he must be regarded as one of the benefactors of the human race. So great is his fame that it may be placed in competition with that of Aristotle and Bacon. His admirers may perhaps, in some instances, have gone too far in praise of his system, and may have too servilely followed his precepts, a result which has led several of late years to undervalue the exertions of Linnæus: but we may venture to predict, that so long as the study of nature finds admirers, so long will the ardent and zealous exertions of the Swedish naturalist exact from succeeding generations the tribute of just applause. Before the Society I now address, who annually assemble to declare the honour due to him, by making his natal day their anniversary, I need not insist upon the gratitude due to departed greatness; but the occasion seems to call forth an expression, feeble though it may be, of those feelings of admiration which must necessarily spring up in every enlightened mind, when reflecting on the brilliant career of the Swedish philosopher.

Charles Linné, or as he is now generally called, Linnæus, was born on May 24th, 1707, in a village called Roeshult in Smaland, where his father Nicholas Linné was then vicar. Charles was destined for the church, but he early showed so decided a taste for natural history, that he was educated as a physician. Being entirely destitute of fortune, he had to contend with very great difficulties, and his early life is one continued history of laborious exertion in the pursuit of the favourite science which he ardently loved. Who can read the account of the interesting, perilous, and fatiguing journey, made by Linnæus on foot, through the whole of Lapland as far as the Frozen Ocean, without being penetrated with feelings of admiration for the undaunted and unconquerable spirit with which he overcame all obstacles, or without experiencing a glow of satisfaction at the success with which the labours of this young adventurer were crowned.

Pursuing his course onward in life, we find his merits as a naturalist duly appreciated by his contemporaries. He did not graduate as a physician until 1735, about which time he published the celebrated work upon which his fame principally rests, the Systema Naturæ. By this it appears that he had, before he was twenty-four years old, laid the basis of that structure which he afterwards erected to the increase of his own fame as well as of natural science.

The system of Linnæus was, in one

sense, confessedly artificial. He divided vegetables or plants in twenty-four classes, according to the number, the insertion, the comparative length, the union, or separation of the stamina. This arrangement brought together many discordant species: it has nevertheless been found to be admirably adapted to facilitate the knowledge of plants.

After the appearance of this great work, the fame of Linnæus became European, and in 1736 he visited England, where he was received with distinction, and became acquainted with Dillenius, Martyn, Rand, Miller, Lawson, and Collinson, who were then successful cultivators of his favourite science in this country.

After this time he was favourably noticed by almost every scientific body in Europe; and in 1757, his reputation having then procured for him honours from almost all the Royal Societies in Europe, Adolphus Frederic created him a noble of Sweden. His successor, Gustavus III. doubled his pension in 1776, and settled a liberal donation of landed property on his family. Thus we see the persevering Swede, who began life in poverty and neglect, by the influence of exertions, greater than we can often find related in the biography of great men, raised himself to be the companion of princes, and to a fame which the passing away of a century has rather tended to increase than diminish.

Doubtless there were many things in the state of Natural History at the time that Linnæus became its zealous cultivator, which were favourable to the reformation in the science, which he was the means of effecting. We must not forget that the horizon of science had been illuminated by the brightness cast upon it by Bacon. Dr. Grew had by this time published his catalogue of the Museum of the Royal Society, which showed how zealously Natural History was then cultivated by that learned body. Sir Hans Sloane had also formed his celebrated museum, and Bradley, Fermin, Klein, Knorr, Renard, Brown, and others of inferior note had each done something to advance the progress of our science. But taking all these things into account, and giving to those who have preceded him their just meed of applause, we must admit that the services which Linnæus rendered natural history, at the time he wrote, were immense, and will never be forgotten. His unrivalled invention of nomenclature, which came from his hands, as it were, perfect, will remain of undiminished value so long as science exists, while, to use the words of Mr. Swainson, the simplicity of those rules by which he arranged all the productions of nature then known, cannot be too closely imitated, however different may be the series in which these productions are disposed.

Naturalists were surprised and delighted with the luminous order in which Linnæus arranged his information, and thus he insured for his science many admirers, who duly appreciated a system which required from them no previous study to reveal the beauties of nature. Thus natural history arose in Sweden, under his culture, to a state of perfection unknown elsewhere, and was thence disseminated through all Europe.

Nearly contemporary with Linnæus, but certainly much his inferior in those solid endowments which are necessary to form the scientific naturalist, was the Count de Buffon. He was born at Montbard in Burgundy, the 7th of September 1707. He was intended for the law, but became enamoured of natural history, which was the cherished idol of his heart. Unlike Linnæus he had no pecuniary difficulties to struggle with in the commencement of his career, but succeeded at twenty-two years of age to an ample fortune. So far, however, was this circumstance from damping the ardour with which he investigated nature, that it seems to have given a fresh stimulus to his exertions, and he thus affords a bright example to the affluent, who may from him learn that one good purpose which the possession of wealth may serve is the advancement of scientific research. Buffon's unwearied industry has been the theme of general applause, and the fruits of it were several works of interest on his favourite study. The work, however, on which his fame principally rests is that on Natural History. But Buffon, as a philosopher, was not profound, and all his writings are deficient in method. He arranges nothing upon principle; he groups and accumulates, and notes marks of likeness, but he does not distinguish, nor analyze, nor observe the unity of nature. In 1739 he was, by Louis XIV., appointed Intendant of the Royal Garden and Cabinet of Paris, the treasures of which were considerably augmented under his management. He there formed a friendship with Daubenton, to whom he was indebted for much of his anatomical information.

After all, we must admit that as a dis-

coverer Buffon did but little. His chief merit consists in the fascinating garb in which he presented natural history before the public, and thus made its study popular throughout France. The sustained dignity of his style and the brilliancy of his descriptions have been universally admitted. It is unreasonable to expect that a man like Buffon should excel in such opposite qualities as rigid and laborious research, cautious deduction, and flowery eloquence, but as a minister of the temple of nature, he is always instructive and engaging.

But the great defect observable throughout the writings of Buffon, and which certainly should not be concealed, is, that on no occasion does the contemplation of the works of nature call forth from him a religious sentiment, and he consequently has often been accused of indifference to the great First Cause of the sublimities of creation. It is certainly desirable that we at all times remark with delicacy upon the failings of departed genius; but as one great object for which this Society was formed is to point out the hand of the Great Designer in the works of the universe, I feel that I do not transgress the bounds of charity when I say that the works of Buffon would be more in accordance with the spirit of true philosophy if this important omission had been supplied.

After the disappearance of Linnæus and Buffon from the stage they had each of them numerous followers, but their disciples were of a very different character. Those who admired scientific arrangement and profound views of nature studied the works of the great Swedish naturalist; whilst the writings of the French philosopher being more acceptable to the general reader, and being completely in accordance with the character of that nation to which he belonged, there were found many among his own countrymen and throughout Europe, not deeply versed in science, who consulted his splendid compositions.

It would not be consistent with this short sketch to enter into any full account of the numerous contributors to Natural History who adorned the termination of the last century; but there is one great genius that shed a lustre upon England about this time, to whom, as a comparative anatomist whose labours did much to forward the progress of natural history, it would be unpardonable not to allude. The whole life of the celebrated surgeon, John Hunter, was a series of incessant labour, or rather of delightful occupation, for it was spent in pursuits to which he was devoted heart and soul. The extent and variety of the treasures contained in his famous Museum, and the beautiful dissection and display of each specimen, in reference to its intended object, proclaim the active exertion and industry of this great man, and seem to tell us that there is not one among us who may be disposed to lend his time and zealous exertions to assist in forming the museum which this society is now collecting, to elucidate the several branches of the science we cultivate, however humble may be his talent, who may not signalize himself by adding some interesting object to our collection, and thus by dint of observation and industry contribute to our stock of knowledge.

By the members of the medical profession this appeal should be forcibly felt; to them may belong the honour of forming what I may call a physiological series of comparative anatomy. This series may, in the course of years, become so extensive as to embrace most of the structures, and each subdivision may, as the Hunterian Museum, be arranged in an ascending scale from the most simple to the most complicated, and thus the cultivators of medical science, residing in this town and county, by taking the collections of the immortal Hunter for their guide, may, during the present generation, be the means of collecting together an epitome of general anatomy and physiology. Such a collections will contain the philosophy of life, and by disclosing the grounds on which all the principal divisions of natural history must be founded, will afford the basis of systematic zoology.

In returning from the digression into which I have just been led by the transcendent genius of Hunter, let me endeavour to say a few words explanatory of the progress of natural history in Europe after the death of Linnæus and Buffon, which occurred towards the close of the last century. I may observe that the followers of Buffon may be considered as a dilettanti sect of philosophers, who were pleased to gather the honey from the flowers of science; but the disciples of Linnæus were a more systematic class, and pursued natural history according to more rigorous rules. Too strict an adherence to the letter of the Linnæan system, however, soon became apparent in the writers upon natural history, and this implicit obedience to the authority of

Linnæus at length rose to such a degree that it became considered a sort of heresy to propose a new division or to name a new genus. The effect of this passive obedience was to stir up in the minds of independent men a distrust of the Linnæan system, and in no branch of natural history has this distrust been carried to a greater length than in botany, and attempts have consequently been made in this country, and more especially in France, to unite the *artificial* arrangements with the *natural* method. This has been termed the *analytic*, and has been exhibited in the "Flora of France," published by Lamarck and De Candolle some years back. Long previous to this period Bernard de Jussieu had arranged the plants of the Botanic Garden at Trianon; but the principles that guided him were unknown till his nephew published the basis of his system, under the title of "Genera Plantarum," in 1789.

I cannot attempt to do justice to the labours of the numerous naturalists who have adorned this department of science since the Linnæan epoch. From the termination of the last century to the present time has been an era in the history of the world, uparalleled by the degree of intellectual activity which has been displayed, and by the consequent advancement of art and science. After a quarter of a century being distinguished by all the horrors produced by the desolations of war, and after the carnage of millions of human beings had taken place to gratify the ambitious views of a few restless spirits, the nations of Europe seem now to be engaged in the far more glorious rivalry of a zealous prosecution of the branches of useful knowledge and the cultivation of the arts of peace; the result of which is, that a continual interchange of knowledge is going on between the nations of the world, and the scientific investigations of their great men are universally diffused. No branch of knowledge has been more favourably affected by this peaceful repose than natural history. The circumstance of the continent being thrown open to Englishmen has, in this respect, had the happiest effect; for the splendid collections of natural history that are to be found in Paris and in other great capitals of Europe, have been the means of inspiring many a wanderer from this country with a desire to see similar museums spring up in England. Thus a decided taste for this science is propagated abroad, and seems likely to be widely disseminated. But not only so, the number of books on this subject that have been translated from the French, shows how much we owe to this communication with other countries. There is one extraordinary man, whose prodigious industry and labour have so impressed themselves on the volume of natural history, that he will for ages stand prominently forth as one of the greatest ornaments of this era. The lately departed Cuvier has secured for himself an undying fame, and will be spoken of by succeeding generations as a kindred spirit with Aristotle, and Bacon, and Linnæus.

Cuvier was born at Montbeliard, in Alsace, in the year 1769, and died in the year 1832. He had comparatively small advantages of education in early life, but showed a decided inclination for the pursuit of zoology—a pursuit into which he seems to have been led by the eloquent descriptions of Buffon.

Circumstances conspired to take Cuvier to Paris, after having, in a secluded situation, devoted himself assiduously to the study of the Mollusca. He there gave lectures which gained him much reputation, and at the establishment of the Institute in 1796, he was chosen one of the original members; and the papers which he read before that body, giving an account of his researches and discoveries in comparative anatomy, enriched their memoirs, and procured for him a high and widely-extended reputation at an early period of life. In 1800 he was appointed Secretary to the Institute. In the same year Buonaparte was appointed President. Cuvier thus, by virtue of his office, was brought into immediate and frequent communication with that extraordinary man, an event which had a material influence upon his future destiny, and opened to him new and wide fields of usefulness and distinction. Such were the powers of his mind, and so great was the versatility of his genius, that in whatever situation he was placed his superiority was soon acknowledged by his associates.

It so happened that the attention of Cuvier had, early in life, been directed precisely to those parts of zoology which the inquiries of preceding zoologists had left the most imperfectly investigated,—the mollusca, vermes, and zoophytes. All these were included in one class by Linnæus, the class of vermes. This arrangement was materially modified by Cuvier, who based his distinctions of animals principally on their properties of sensation and motion, the most marked

attributes of animals. Observation taught him that certain species of the mollusca, which had been indiscriminately denominated white-blooded, had red blood and a circulating system; he collected them into a distinct class, the Annelides; still correctly included, in conformity to his general view, among the invertebrated animals, although previously both incorrectly classified and designated. The best proof of the correctness of the principle of Cuvier's classification is, that in the progress of his observations it became confirmed by a wider application, and the principle of the masterly arrangement of his great work on the animal kingdom. Thus examining the modifications of the organs of the circulation, respiration, and sensation throughout the animal kingdom; instead of the six classes of Linnæus, namely, quadrupeds, birds, reptiles, fishes, insects, and worms, M. Cuvier established four great types,—vertebrated animals, molluscous animals, articulated animals, and radiated animals, which he calls embranchemens, and divides these into classes of nearly equal value with those long established among the vertebrated animals.

(To be Continued.)

THE ANATOMIST.

MUSCLES.

Palmaris longus. *O.* inner condyle and fascia of forearm. *I.* Annular ligament and palmar aponeurosis, near root of thumb.

Flexor carpi ulnaris. *O.* inner condyle, inner side of olecranon, inner edge of nearly whole length of ulna, and forearm. *I.* os pisiforme and base of fifth metacarpal bone.

Flexor digitorum sublimis perforatus. *O.* inner condyle, internal lateral ligament, coronoid process, and radius below tubercle. *I.* anterior part of second phalanges of each finger.

Flexor digitorum profundus perforans. *O.* three upper fourths of anterior surface of ulna, internal half of interosseous ligament, sometimes from radius below its tubercle. *I.* last phalanx of each finger.

Flexor pollicis longus. *O.* fore part of radius below the tubercle, and from interosseous membrane to within two inches of carpus, sometimes from coronoid process. *I.* last phalanx of thumb.

Pronator quadratus. *O.* inferior fifth of anterior surface of ulna. *I.* anterior part of inferior fourth of radius.

Supinator radii longus. *O.* external ridge of humerus to within two inches of outer condyle, and from intermuscular ligament. *I.* rough surface on the outside of radius, near its styloid process.

Extensor carpi radialis longior. *O.* ridge of humerus, between supinator longus and external condyle. *I.* back part of carpal extremity of metacarpal bone of index finger.

Extensor carpi radialis brevior. *O.* inferior and posterior part of external condyle, and external lateral ligament. *I.* carpal extremity of third metacarpal bone.

Extensor digitorum communis. *O.* external condyle, fascia of forearm and its intermuscular septa, and from ulna. *I.* posterior aspect of all the phalanges of four fingers.

Extensor carpi ulnaris. *O.* external condyle, fascia, and septa, and from ulna. *I.* carpal end of fifth metacarpal bone.

Anonæus. *O.* posterior and inferior part of external condyle and lateral ligament. *I.* external surface of olecranon, and superior fifth of posterior surface of ulna.

Extensor minimi digiti. *O.* in common with and between extensor digitorum communis and extensor carpi ulnaris. *I.* posterior part of phalanges of little finger.

Supinator radii brevis. *O.* external condyle, external lateral, and coronary ligaments, and from a ridge on outer side of ulna, which commences below its lesser sigmoid cavity. *I.* upper third of external and anterior surface of radius, from above its tubercle to the insertion of pronator radii teres.

Extensor ossis metacarpi pollicis. *O.* middle of posterior part of ulna, below the anconæus, interosseous ligament, and posterior surface of radius. *I.* os trapezium and upper and back part of metacarpal bone of thumb.

Extensor primi internodii pollicis. *O.* back part of ulna, below its middle, interosseous ligament, and radius. *I.* posterior part of first phalanx, and often the second.

Extensor secundi internodii pollicis. *O.* posterior surface of ulna, above its centre, and from interosseous ligament. *I.* posterior part of last phalanx.

Extensor indicis. *O.* middle of posterior surface of ulna, and interosseous ligament. *I.* second and third phalanges.

Abductor pollicis. O. anterior aspect of annular ligament, os naviculare, and trapezium. *I.* outside of base of first phalanx, and by an expansion into both phalanges.

Opponens pollicis. O. annular ligament and os naviculare. *I.* anterior extremity of metacarpal bone of thumb.

Flexor pollicis brevis. O. *external head*, from inside of annular ligament and trapezium and scaphoid bones. *I.* external sesamoid bone and base of first phalanx of thumb. *Internal head.* O. from os magnum and base of metacarpal bone of middle finger. *I.* internal sesamoid bone and base of first phalanx.

Adductor pollicis. O. three-fourths of anterior surface of the third metacarpal bone. *I.* inner side of root of first phalanx of thumb.

Abductor indicis. O. metacarpal bone of fore finger and one-half of that of thumb. *I.* outer side of base of first phalanx.

Lumbricales. O. outer side of the tendons of flexor profundus, near the carpus, a little beyond annular ligament. *I.* middle of first phalanx into tendinous expansion covering the back of each finger.

Abductor minimi digiti. O. annular ligament and os pisiforme. *I.* ulnar side of first phalanx.

Flexor brevis minimi digiti. O. annular ligament and unciform bone. *I.* base of first phalanx of little finger.

Adductor minimi digiti. O. internal to last, and overlapped by it. *I.* all the metacarpal bone of little finger.

Interossei antici, vel interni, vel palmares. O. sides of metacarpal bones. *I.* first phalanges and tendinous expansion, covering the dorsum of each finger.

1st, *vel prior, vel externus indicis.* O. radial side of second metacarpal bone. *I.* external side of first phalanx of fore finger.

2nd, *vel posterior, vel internus, vel adductor indicis.* O. ulnar side of second metacarpal bone. *I.* inner side of first phalanx of ring finger.

3d, *vel prior, vel externus, vel adductor annularis.* O. radial side of fourth metacarpal bone. *I.* external side of first phalanx of fore finger.

4th, *vel abductor minimi digiti.* O. radial side of fifth metacarpal bone. *I.* outside of first phalanx of little finger.

Interossei posteriores. O. opposed sides of two metacarpal bones. *I.* base of first phalanx of each finger and posterior tendinous expansion.

1st, *prior vel externus medii.* O. second and third metacarpal bones. *I.* outer side of base of first phalanx of middle finger.

2nd, *vel internus medii.* O. between the metacarpal bones of middle and ring fingers. *I.* inner side of first phalanx of middle finger.

3rd, *vel externus annularis.* O. between fourth and fifth metacarpal bones. *I.* inner side of ring finger.

ABDOMEN.

Obliquus externus vel descendens. O. external surfaces of eight or nine inferior ribs at a little distance from their cartilages. *I.* ensiform cartilage, linea alba, os pubis, Poupart's ligament, anterior superior spinous process of ilium, and outer edge of two anterior thirds of crista ilii.

Obliquus internus vel ascendens. O. fascia lumborum, all the crista ilii, and external third or fourth of Poupart's ligament. *I.* cartilages of seven inferior ribs, ensiform cartilage, linea alba, also by conjoined tendons into symphysis and upper edge of pubis, and into linea ileo pectinea.

Cremaster. This muscle, deriving part of its origin from internal oblique, is here described, though being a muscle of the testicle. O. inner surface of external third of Poupart's ligament, and from lower edge of obliquus internus, and sometimes from transversalis; it often has an attachment to the pubis. *I.* tunica vaginalis and scrotum.

Transversalis. O. fascia lumborum, posterior part of crista ilii, iliac third of Poupart's ligament, and inner side of seven inferior ribs. *I.* along with posterior lamina of obliquus internus, into the whole length of linea alba, upper edge of pubis and the linea innominata.

Rectus. O. upper and anterior part of pubis. *I.* ensiform cartilage, costo-xiphoid ligament, and cartilages of sixth and seventh ribs.

Pyramidalis. O. broad from pubis. *I.* linea alba, mid-way to umbilicus; sometimes wanting.

DEEP MUSCLES OF THE ABDOMEN.

Diapragm is divided into two portions; a superior broad or true diaphragm; and an inferior lesser portion, or crura diaphragm.

True diaphragm. O. posterior surface of xiphoid cartilage, internal surfaces of cartilages of the last true and all the

false ribs, external or false ligament arcuatum, and convex edge of true ligamentum arcuatum. *I.* cordiform tendon.

False or lesser diaphragm, or crura. O. right crus, from fore part of bodies of four superior lumbar vertebræ. Left crus from the sides of the two or three superior lumbar vertebræ. *I.* posterior border of cordiform tendon.

Quadratus lumborum. O. posterior fourth of spine of ilium, and from ilio-lumbar ligament. *I.* extremity of transverse processes of four superior lumbar and last dorsal vertebræ, also inner surface of posterior half of last rib.

Psoas parvus. O. side of last dorsal and first lumbar vertebræ. *I.* linea ileo-pectinea, fascia iliaca, and fascia lata, behind the femoral vessels; sometimes wanting.

Psoas magnus. O. sides of bodies of two last dorsal, and from bodies and transverse processes of all the lumbar vertebræ, also from inter-vertebral ligaments. *I.* inferior part of lesser trochanter and ridge below that process.

Iliacus internus. O. transverse process of last lumbar vertebra, inner margin of three anterior fourths of crista ilii, and its two anterior spinous processes and intervening notch, brim of acetabulum, capsular ligament, iliac fossa, and iliac fascia. *I.* into psoas magnus; the inferior fibres are inserted into anterior and inner surface of femur, below trochanter minor.

MUSCLES OF MALE PERINÆUM.

Sphincter ani. O. ano-coccygeal ligament. *I.* into raphe, superficial fascia, and common central point of perinæum.

Sphincter internus encircles the lower part of rectum.

Erector penis. O. inner surface of tuber ischii, and from insertion of great or inferior sciatic ligament. *I.* fibrous membrane of crus penis.

Accelerator urinæ. O. 1st, triangular ligament of the urethra; 2nd, by a broad tendon common to opposite muscles, which lies above urethra, between it and pubis; 3rd, by a tendinous expansion from the side of crus penis. *I.* middle tendinous line or raphe of perinæum.

Transversalis perinæi. O. inside of tuber ischii. *I.* central point of perinæum.

Levator ani. O. posterior part of symphysis pubis, obturator fascia, ilium above thyroid foramen, inner surface of ischium, and its spinous process. *I.* anterior fibres into central point of perinæum and fore part of rectum; middle fibres into side of rectum, posterior fibres into back part of rectum, os coccygis, and last bones of sacrum.

Compressor urethræ. O. by a tendon from the inside of symphysis pubis. *I.* below membranous portion of urethra, into the narrow tendinous line, which becomes lost in central point of perinæum.

Coccygeus. O. inner surface of spine of ischium. *I.* extremity of sacrum and side of coccyx.

MUSCLES OF FEMALE PERINÆUM.

Sphincter ani. O. ano-coccygeal ligament. *I.* raphe, superficial fascia, and common central point of perinæum.

Levator ani. O. posterior part of symphysis pubis, below true ligaments of bladder, obturator fascia, ilium above thyroid foramen, inner surface, and spine of ischium. *I.* the same as in the male.

Coccygeus, as in the male.

Transversalis perinæi, as in the male.

Erector clitoridis O. inner surface of tuber ischii, and insertion of great sciatic ligament. *I.* fibrous membrane of crus clitoridis.

Sphincter vaginæ, extends from clitoris superiorily, around each side of vagina to central point of perinæum, in front of anus.

MUSCLES OF THE INFERIOR EXTREMITY.

Fore Part and Sides of the Thigh.

Tensor vaginæ femoris. O. external part of anterior superior spine of ilium. *I.* fascia lata about three inches below the great trochanter.

Sartorius. O. anterior superior spine of ilium and notch beneath it. *I.* inner side of upper end of tibia, below its tubercle.

Rectus femoris. O. anterior inferior spinous process of ilium, acetabulum, capsular ligament. *I.* upper edge of patella.

Vastus externus. O. root and anterior part of great trochanter, outer edge of linea aspera, oblique ridge leading to external condyle, all internal surface of femur, and facia lata. *I.* external surface of tendon of rectus, side of patella, and head of tibia.

Vastus internus. O. anterior part of femur, linea inter-trochanterica, inner edge of linea aspera, and inside of femur. *I.* inner edge of tendon of rectus, patella, and head of tibia.

Cruræus. O. anterior and external

part of femur, commencing at linea intertrochanterica, and extending along three-fourth of the bone, as far outwards as linea aspera. *I.* upper and outer edge of patella, and synovial membrane of knee joint.

Subcrurœus or capsularis. O. inferior fourth of anterior surface of femur. *I.* synovial membrane of knee joint.

Gracilis. O. lower half of symphysis, and inner edge of descending ramus of os pubis. *I.* superior part of internal surface of tibia.

Pectinœus. O. linea innominata on horizontal ramus of pubis. *I.* rough ridge leading from lesser trochanter to linea aspera.

Triceps adductor femoris.

1*st, adductor longus.* O. anterior surface of pubis, between spine, and symphysis. *I.* middle third of linea aspera.

2nd, *adductor brevis.* O. anterior inferior surface of pubis, between symphysis and thyroid foramen. *I.* superior third of internal root of linea aspera to three inches below lesser trochanter.

3d, *adductor magnus.* O. anterior surface of descending ramus of pubis, ramus of ischium, and external border of its tuberosity. *I.* rough ridge leading from great trochanter to linea aspera, linea aspera, and internal condyle of femur.

MUSCLES OF HIP.

Glutœus maximus. O. posterior fifth of crista ilii, the rough surface between it, and superior semicircular ridge, posterior ilio-sacral ligaments, lumbar fascia, spines of sacrum, side of coccyx, and great sciatic ligament. *I.* rough ridge leading from great trochanter to linea aspera, upper third of linea aspera, and fascia lata.

Glutœus medius. O. deep surface of fascia covering it, three anterior fourths of crista ilii, superior semicircular ridge, and surface of ilium above and below it. *I.* upper and outer part of great trochanter.

Glutœui minimus. O. inferior semicircular ridge on dorsum of ilium, rough surface between it, and edge of acetabulum. *I.* upper and anterior part of great trochanter.

Pyriformis. O. concave aspect of 2nd, 3rd, and 4th divisions of sacrum, upper and back part of ilium, and anterior surface of great sciatic ligament. *I.* upper part of digital fossa.

Gemellus superior. O. spine of ischium. *I.* upper part of digital fossa.

Gemellus inferior. O. upper part of tuber ischii, and great sciatic ligament. *I.* digital fossa.

Obturator internus. O. pelvic surface of obturator ligament, circumference of obturator foramen, and obturator fascia. *I.* digital fossa.

Quadratas femoris. O. external surface of tuber ischii. *I.* Inferior and posterior part of great trochanter and posterior inter-trochanteric line.

Obturator externus. O. inferior surface of obturator ligament and surrounding surfaces of pubis and ischium. *I.* digital fossa.

MUSCLES ON BACK PART OF THIGH.

Biceps flexor cruris. Long head. O. outer and back part of tuber ischii. *Short head.* O. linea aspera, from below insertion of glutæus maximus to within two inches of external condyle. *I.* head of fibula.

Semitendinosus. O. tuberosity of ischium, and from three inches of the tendon, long head of biceps. *I.* anterior angle of tibia, below tubercle.

Semimembranosus. O. upper and outer part of tuber ischii. *I.* external condyle of femur, forming the ligament of Winslow, posterior heads of tibia and fibula, and head of tibia.

MUSCLES ON ANTERIOR AND EXTERNAL PART OF LEG.

Tibialis anticus. O. outer part of two superior thirds of tibia head of fibula, inner half of interosseous ligament, fascia of leg, and intermuscular septa, *I.* inner side of internal cuneiform bone and base of first metatarsal bone.

Extensor digitorum longus. O. external part of head of tibia, head and three-fourths of fibula, part of interosseous ligament, fascia of leg, and intermuscular septa. *I.* last phalanges of four external toes.

Extensor pollicis proprius. O. inner edge of middle third of fibula, interosseous ligament, and lower part of tibia. *I.* bases of first and second phalanges of great toe.

Peronœus tertius. O. anterior surface of lower half of fibula. *I.* base of fifth metatarsal bone.

Extensor digitorum brevis. O. upper and anterior part of os calcis, cuboid bone, astragalus and annular ligament. *I.* internal tendon into base of first phalanx of great toe, the three others join the outer edges of corresponding tendons of extensor digitorum longus.

MUSCLES ON OUTER PART OF LEG.

Peronæus longus. O. around head of fibula, adjacent suface of tibia, upper half of external angle of fibula, fascia and intermuscular septa. *I.* outer side of metatarsal bone of great toe, adjacent sesamoid bone, internal cuneiform bone and base of second metatarsal bone.

Peronæus brevis. O. outer and back part of lower half of fibula, and intermuscular septa. *I.* os cuboides and base of metatarsal bone of little toe.

WORKING OF THE NEW POOR LAW ACT.

Southwark, May 24, 1837.

Sir,—The Council of the British Medical Association consider that the publication of the enclosed copies of a correspondence between Dr. Webster, our President, and Mr. Chadwick may be useful and interesting to the profession at the present moment, they have therefore instructed me to transmit them to you, with a request that you will please to insert them in your Journal.

I am, Sir, your obedient servant,
Wm. EALES, Hon. Sec.

To M. Ryan, Esq., M.D.

Dulwich, 21st April, 1837.

Sir,—As the President of a large Medical Association, and referring to the conversation I had the honor of holding with you on Saturday last, I desire respectfully to submit the following queries through you, to the consideration of the Board of Commissioners.

1st.—If medical gentlemen be proposed or appointed, as parochial attendants, by a Board of Guardians, and their appointments confirmed by the Poor Law Commissioners, is it considered that such gentlemen hold their situations of the Guardians or the Commissioners?

2nd.—Can parish surgeons, so appointed, be suspended or removed without the approval of the Commissioners?

3rd.—Are such appointments considered to be during good behaviour? Are they annual appointments as under the old law? Or can they be terminated at the pleasure of the Guardians, without any particular reason, such as inattention, misconduct, &c.?

4th.—Would the Poor Law Commissioners sanction any Board of Guardians in passing certain resolutions (to be made known to five only out of thirty medical gentlemen, in the parish or union) making it a *sine qua non* that the candidates for the office of parish surgeon should belong to any medical club that might be formed in such parish?

5th.—Has the Board of Guardians any power to fix the qualifications of parish surgeons, in so far, that the candidates must be members of the College of Surgeons, *and also* licentiates of the Apothecaries' Company? Is not this exceeding the limits of the Act of Parliament?

6th.—Are members of the Scotch and Irish Colleges equally eligible with members of the London Colleges to the office of medical attendant to the poor?

Answers to the above queries would be gratifying to the Committee of the British Medical Association, now sitting to consider the effects of the present plan for administering medical relief to the sick poor.

I beg to forward the pamphlets which I mentioned to you as, in my humble opinion, worthy the consideration of yourself and the Commissioners,

I am, Sir,
your most obedient servant,
(Signed) Geo. Webster, M.D.

To Edwin Chadwick, Esq.,
Secretary to the Poor Law Commissioners.

Poor Law Commission Office,
Somerset House, 18th May, 1837,

Sir,—Your letter of the 21st ultimo has been brought under the consideration of the Poor Law Commissioners for England and Wales, who, in reply to your several inquiries, desire to state.—

1st.—That the terms of a medical officer's appointment are prescribed by his contract; he is subject to the Guardians' immediate orders under the rules of the Commissioners, and is only liable to be dismissed by the Commissioners, under the 48th section of the Poor Law Amendment Act.

2nd.—A medical officer can be suspended or removed only for gross misconduct, or such neglect of his contract as would disentitle him to the benefit of its provisions.

3rd—The appointments of medical officers are annual.

4th.—The Commissioners could not sanction the passing of any resolution by the Guardians, to the effect described in your fourth inquiry. The only qualifi-

cation for medical officers which the Commissioners can allow, are:—

1. The being authorized by law to practice.

2. That the person has not rendered himself objectionable, by forfeiting character for skill or propriety of conduct.

5th—It is competent to the Guardians to appoint any qualified person as medical officer; but it would not be illegal, if they, with their present discretion, should insist upon a concentration of legal qualifications, such as are instanced in the inquiry.

6th.—The office of medical attendant is not simply that of an Apothecary, the Commissioners, therefore, do not consider that members of the Scotch and Irish Colleges are excluded.

Signed, by order of the Board,
E. Chadwick, Secretary.

METROPOLITAN FREE HOSPITAL,

29, Carey-street, Lincoln's Inn Fields,

Established in June, 1836, for the Gratuitous Relief of the Sick Poor of every Nation and Class, without Letter or other Introduction.

Report of the Committee, &c., 1837.

The Committee of the Metropolitan Free Hospital, in presenting this their first annual Address, beg leave to congratulate the Vice-Presidents and Governors on the increasing prosperity of this Institution, which has, in a period of eleven months, enabled them to alleviate the sufferings of 3,928 of their fellow-creatures.

This Institution requires no letter of introduction or recommendation to afford the objects of its bounty immediate and efficient aid in sickness and disease,—a circumstances it should be remembered not general in the Hospitals of this Metropolis; indeed, it stands almost or quite alone in that particular, benefitting immensely *by such plan* its suffering applicants, as must be obvious to all, even without the strong confirmation of the great increase of its patients, as exhibited in the Medical Officers' Report. Letters of recommendation are at times procured with difficulty, too frequently unattainable, and more especially by the forlorn and destitute stranger, who, unknown and unpitied, often seeks in vain for a letter of admission; and if success attends a wearied and exhausted supplicant, it is often after a dangerous and fatal delay; but here disease and destitution are the only requisite credentials for the afflicted poor to find relief,—who may with grateful hearts truly exclaim with the holy Psalmist, "Blessed be the man that provides for the sick and needy."

To the Medical Report the Committee refer with the utmost confidence, proving, as it clearly does, the extensive operations of this Charity, during a season of unusual severity, accompanied by an epidemic of unexampled prevalence.

The demands upon a charity so extensive and unlimited must necessarily be great, the generous sympathy, however, of its subscribers has hitherto supplied them.

The financial affairs are subjected to the most searching inquiry, with the view of using the donations with strict economy, and advancing to the utmost your benevolent intentions most ably seconded as they are by the gratuitous aid of the officers.

The Committee, however, notwithstanding the pleasure they find in the relief afforded to the great number of persons stated, 184 of which were surgical accidents, and 54 cases of disease of the eye, feel themselves most anxious to extend the field of generous labour, by providing a building, which will enable them to receive within wards, such patients whose cases demand constant indoor attendance, or where severe surgical operations are required. Strongly impressed with so great and necessary an advantage, the committee have already commenced a subscription, met, as they think, by a willingness and spirit, cheering the hope of triumphant success; they earnestly appeal, therefore, to the nobility and public in general, to furnish them with supplies, the only means of more largely ameliorating the sufferings of the poor: and take into their serious consideration how greatly such object will be advanced by their giving cordial assistance and support to the "Building Fund of the Metropolitan Free Hospital.

Report of the Medical Committee.

Eleven months have elapsed since the Metropolitan Free Hospital was first opened to the public, and the medical officers experience no small degree of gratification in reverting to their proceedings during that period.

Situated in the midst of a thickly inhabited district, abounding in poor, whose means of subsistence are scanty and uncertain, and amongst whom disease might well be expected to keep pace with destitution, the medical officers of the Metropolitan Free Hospital have found ample opportunity, and no lack of applicants, upon whom to exercise the charity that has been supplied by the generosity and benevolence of a liberal body of governors.

In the first eleven months of their duty they have relieved no fewer than 3,928 poor persons, giving an average of 4,285 upon the year ending on the 14th of May, 1837; the medical officers feel some degree of confidence in the conciousness that their exertions have in a great majority of instances availed in retoring to perfect health these unfortunate applicants.

During the long and inclement winter now scarcely passed, the distress of the poor was greatly increased by an epidemic of unusual severity; it attacked all indiscriminately,—the strong and robust man not less than the delicate female or the tender and helpless infant. At this time the Metropolitan Free Hospital was of incalculable advantage to the poor in its vicinity; and the medical officers have no hesitation in believing that, by its means, many a parent has been saved to his destitute and unprovided family.

They believe that the success which this Institution has achieved is without precedent in the history of medical charities of the Metropolis. The numbers relieved in its first year of its existence, and the extremely moderate cost at which it has been done, furnish matter of congratulation to those who have been the almoners of the charitable governors, and at the same time encourages the latter not to relax in their contributions for the same useful purposes.

There has been an election for Apothecary to the hospital, in place of Mr. Hentsch who had resigned. While the medical officers express their approbation of the manner in which Mr. H. performed his duties, they believe that they have reason to congratulate the governors in the appointment of an efficient successor in the person of Mr. Jones.

The apothecary's department has necessarily participated in the general expenditure attendant upon a first outlay; but they are instituting an arrangement in it, by which they hope that the expense will be further materially diminished, without in any way interfering with the general efficiency of the establishment.

The medical officers report with pleasure the establishment of an ophthalmic department in this hospital, by which the poor, afflicted with diseases of the eye, may find immediate relief on application at those hours set apart for this purpose.

The medical officers cannot close their report without recording their unanimous acknowledgments of the courteous manner and cordial desire of co-operation which has ever characterized the conduct of the committee of management towards them. It augurs well for the prosperity of the hospital, that men so zealous should have had the controul of its affairs, and they congratulate themselves in having been associated with gentlemen so fully entitled to their confidence and respect.

METROPOLITAN FREE HOSPITAL.

Number of out-patients admitted from the 14th of May, 1836, to the 6th of April, 1837.

Received under the care of the Physicians	2,318
Received under the care of the Surgeons, including 54 cases of disease of the eye, and 184 Accidents	1,242
Received under the care of the Dentist	368
	3,928

(Signed)

David Uwins, M.D.
M. Ryan, M.D.
John Steggall, M.D. } Physicians.

Alex. Tweedie,
P. Bennett Lucas,
John Dalrymple. } Surgeons,

James Robinson, Dentist.

The Metropolitan Free Hospital,
29, *Carey Street, April* 6, 1837.

GENERAL REGISTER.

We, the undersigned President of the Royal College of Physicians, President of the Royal College of Surgeons, and Master of the Worshipful Society of Apothecaries, having authority from the several bodies whom we represent, do resolve to fulfil the intentions of the Legis-

lature in procuring a better registration of the causes of death, being convinced that such an improved registration cannot fail to lead to a more accurate statistical account of the prevalence of particular diseases from time to time.

We pledge ourselves, therefore, to give in every instance which may fall under our care, an authentic name of the fatal disease.

And we entreat all authorized practitioners throughout the country to follow our example, and adopt the same practice, and so assist in establishing a better registration in future throughut England; for which purpose we invite them to attend to the subjoined explanatory statement, in which they will set forth the provsions of the recent statute, and the means whereby the important object we have recommended may most effectually be attained.

HENRY HALFORD,
President of the Royal Col. of Physicians.

ASTLEY COOPER,
President of the Royal Col. of Surgeons.

J. HINGESTAN,
Master of the Society of Apothecaries.

EXPLANATORY STATEMENT.

The recent Act for registering births, deaths, and marriages in England, presents an opportunity for obtaining that great desideratum in medical statistics—a more exact statement of the causes of death, in the case of every registered death throughout the whole of England and Wales, after the month of June next ensuing.

The register-books in which all deaths are to be registered after the last day of June, 1837, contain columns wherein may be inserted the cause of death in juxtaposition with those other important illustrative circumstances, the sex, the age, and the profession or calling of the deceased person. Each register-book will also be assigned to a particular district of small extent, and will thus show in what part of the kingdom each death has occurred. If, therefore, the cause of death be correctly inserted, there will exist thenceforward public documents, from whence may be derived a more accurate knowledge, not only of the comparative prevalence of various mortal diseases, as regards the whole of England and Wales, but also of the localities in which they respectively prevail, and the sex, age, and condition of life which each principally affects.

For the attainment of this object it is necessary to ensure, as far as possible, the "cause of death." It is obvious that on this subject the requisite information can seldom be given to the registrar, except by the medical attendant on the deceased person, and that even if the registrar be a medical practitioner (which in many instances will be the case), yet will he often be unable to ascertain the truth in this respect, if he is to depend solely on the reports of persons ignorant of medicine, and of the names and nature of diseases; and it cannot be expected that from his own knowledge he will be able so far to correct their errors as to ensure a statement worthy of credit. The requisite information must therefore be supplied, either directly or indirectly, by the medical attendant of the deceased person; that is to say, if such medical attendant is not applied to by the registrar, he must afford the requisite information to those other persons to whom the registrar must apply.

The persons who, according to the act for registering births, deaths, and marriages in England, must give information to the registrar on being requested so to do, are "some person present at the death, or in attendance during the last illness," or "in case of the death, illness, inability, or default of all such persons, the occupier of the house or tenement, or, if the occupier be the person who shall have died, some inmate of the house or tenement in which such death shall have happened." It is also provided that "for the purposes of this act the master or keeper of every gaol, prison, or house of correction, or workhouse, hospital, or lunatic asylum, or public or charitable institution, shall be deemed the occupier thereof."

It is therefore earnestly recommended that every practising member of any branch of the medical profession who may have been present at the death, or in attendance during the last illness, of any person, shall immediately after such death place in the hands of such other persons as were in attendance, of the occupier of the house in which the death occurred, and of some inmate who may probably be required to give information, written statements of the cause of death, which such persons may show to the registrar, and give as their information on that subject.

It is desirable that such statement

should be very short, the column in the register-book in which it is to be inserted being not more than sufficient for the insertion of about ten words of moderate length. It should, therefore contain only the name of the disease which was considered to be the cause of death, and not a detailed account either of antecedent symptoms, or of the appearances which may have presented themselves after death. It is also desirable that such statement should exhibit the popular or common name of the disease, in preference to such as is known only to medical men, whenever the popular name will denote the cause of death with sufficient precision.

CASE OF STRANGULATED CRURAL HERNIA.

Occurring in a Pregnant Female, in which an Operation was successfully performed.

By John Paul, M.D.,

Surgeon to Gray's Hospital, Elgin,

Mrs. Ritchie, æt. 35, the mother of five children, was siezed with symptoms of strangulation in an irreducible crural hernia of the right side, on August 30, 1836. The protrusion, she said, had taken place about two years and a half before during severe vomitings, which she had in the incipient stage of a former pregnancy; and since that time she has never been free from pain in her back, which has always given her a feeling of something dragging down there. The bowels too became so torpid in their peristaltic motion, that they never acted without drastic purgatives, and then only with very great uneasiness. The tumour was tense, somewhat tender, and larger than what a crural hernia generally is; vomiting was most distressing and almost incessant; the bowels were completely obstructed—Mrs R. considered herself three months advanced in pregnancy.

It was thought useless to make any very great effort at reduction by the taxis, as the hernia had never been reduced from the time it first protruded. Powerful enemata were administered in the first instance, by introducing a tube into the bowel as far as possible, but without any effect in relieving the obstruction. The patient was then bled and put into a warm bath, with no better result. On the following day the symptoms of strangulation were more urgent, stercoraceous vomiting was almost incessant, the tumour was very tense and painful, and the pulse getting very rapid. I urged the necessity of an immediate operation, which was agreed to. On opening the sac I found it contained a large knucle of intestine and a portion of omentum twisted into the form of a cord, without a particle of adipose matter; there was considerable adhesion between the intestine and sac which I separated with my finger. The stricture being divided the bowel was returned with greater ease, the edges of the wound were kept together by stitches, and a compress and bandage applied; a glyster was in less than an hour administered which procured a large liquid stool, this was followed up in the course of a few hours by small doses of Epsom salts, which operated freely; and for a time alvine discharges were daily elicited by some mild aperient. On removing the stitches on the fifth day I observed the portion of corded omentum again in the sac, in a sloughy condition; in the course of eight or ten days it was removed, and then the wound granulated kindly. On the 6th of March my patient was delivered of a full grown female child, and is now in the enjoyment of excellent health.

I have been induced to put this case on record, because I am not aware that an operation has been performed for the reduction of strangulated hernia in a pregnant female; but whether the case is unique or not it cannot fail to be interesting, inasmuch as it is additional proof, if not the first case to establish the fact, that strangulated hernia may be relieved in pregnancy by operation without its inducing abortion. When every other means of reduction have failed, pregnancy must not be considered an objection to operating; uterine contraction supervening, no doubt materially adds to the danger which always exists under ordinary circumstances; but this, great as it may be, will bear no comparison to that danger to which the patient is inevitably exposed if left without this last resourse of surgery.

Elgin, May 20, 1837.

[This case reflects very great credit on Dr. Paul, as there are few surgeons who would venture to operate under similar circumstances, though the patient would have most probably died, without an operation. There are few, if any, cases of this description on record, which shows the judicious boldness and solid judgment of the operator.]—Eds.

THE KING'S HEALTH.

(*From our Windsor Correspondent.*)

No sooner had the nation been gladdened by the intelligence of a temporary improvement in Her Majesty's health, than they received the announcement of serious indisposition of the King. Those who were in the habit of visiting Windsor, had, for some time past, been struck with a perceptible change in the general appearance of His Majesty; and though his condition was anxiously watched by Mr. Davis, Surgeon to the household, it was not until the evening of Sunday, the 21st of May, that the Royal Family became so alarmed as to deem it expedient no longer to delay procuring the able assistance of the distinguished President of the Royal College of Physicians. Accordingly, an express was sent, commanding Sir Henry's immediate attendance, and the worthy Baronet arrived at full speed soon after ten o'clock within the gates of the castle; and though considerable alarm was excited by his meteor-like appearance, yet the loyal feelings of the people of Windsor were highly gratified in the Royal patient being placed under the skilful and judicious vigilance of a physician so thoroughly and inimitably acquainted with the constitution and habits of the Royal Family, as well as in one in whom the Sovereign, and all the branches of the Royal Family, as well as the nobility and gentry of England, have long placed a most unbounded confidence. Though the medical attendants of the Royal Household are necessarily bound not to divulge the secrets of the Royal bed-chamber, the intense interest which prevailed throughout all classes, led many circumstances to transpire touching the health of His Majesty, which in moments of less anxiety would never have been matters of conversation. Indeed, from the commencement, His Majesty has expressed a particular desire that his ailment should not become a matter of conversation, far less that any individual of the Household should make any communications in writing on the subject; and it is in accordance with these feelings of His Majesty that no bulletins have been issued, documents which, from the pen of Sir Henry, though they would have given high satisfaction to those who are interested in the particulars of His Majesty's complaint, yet might have created so much public anxiety, as to have been prejudicial to the interests of the State.

The great embarrasment in His Majesty's breathing, and profuse mucous expectoration, along with the symptoms of extreme debility with which they were accompanied, were a just cause of alarm during several of the first days of Sir Henry's attendance. By the judicious administration of medicine, a very remarkable mitigation of the more severe symptoms of His Majesty's disorder was effected; though I deeply regret to state that other symptoms have been superadded, which though not of so severe a nature, are still far from being of a favourable character,—I allude to the swellings of the extremities, the precise degree of which I have not been as yet able to ascertain, as all those visitors by whom the King has been seen, particularly mention that the dress of His Majesty is so contrived as completely to veil his external appearance. The royal mind, I rejoice to state, continues to possess its wonted vigor and activity, so that the King has not only given audiences to the great officers of state, but has continued to give his personal commands to the various individuals of His Majesty's Household.

REVIEW.

De la Generation. Par Ch. Girou de Buzareingues, Correspondent de l'Academie Royale de Science, &c. &c.

On Generation. By Ch. Girou de Buzarinques, Corresponding Member of the Royal Academy of Sciences, &c. &c. 8vo. pp. 340.

The author of this work confines his conclusions to the inferior order of mammiferæ, and especially to those animals which are under the observation of agriculturists. He commences by noticing the principal systems of generation, comments upon them, and offers general considerations on the influence of the fathers and mothers in relation to the resemblance and sex of the offspring. He next proceeds to notice the results of his observations on the reproduction of the conformation and sexes, and the general influence of parents on the external and internal characters. After a careful comparison of the facts stated in this work, with those we have already published in this Journal, we are constrained to admit, that we find nothing new, or what has not been already described by preceding writers. He is also silent on human generation, with the exception of a very brief account of the theories of the physiologists.

THE

London Medical and Surgical Journal.

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXVI.

ETIOLOGY.

Exciting Causes of Disease—Poisons—Arsenic—Mode in which it Destroys Life—Different Effects of Large, Small, and Moderate Doses—Analogy with Cholera—Character of the pain produced by it—Experiment on a Dog—Corrosive Sublimate—Hydrophobia—Manner in which the Virus acts—Tabular view of Poisons—Diseases and the principal Poisons which produce them—Organic Diseases—Functional Diseases—Poisons and the principal Diseases which they produce—Animal Poisons—Vegetable Poisons—Mineral Poisons—Tests for Poisons—Sympathy—Diseases which have been attributed to it—Critical Discharges—Opinions of Hippocrates, De Haen, Hoffman, Sendamore, Abernethy, Alibert, Bateman, Broussais, and Marshall Hall—Wounds—Mode in which they produce Tetanus—Venoms and Viruses—Cause of their Fatal Effects—Indian Serpents and other Venemous Animals—Effects of the Bite of the Tarantula—List of the Principal Viruses—Wounds in Dissection—Cause of their Dangerous Effects—Poison from Gangrene—Alleged Vitiation of the Blood—Arguments against it—Innoculation by the Blood—Congenital Syphilis—Syphilis Communicated by Suckling—Hydrophobia from Fright—Various Theories on the Difference between Innoculated and Natural Small-pox—Manner in which Cow-Pock secures from Small-Pox—Poison of the Viper—Suppressed Secretions—Explanation of their Injurious Effects—Diseases produced by suppressed Perspiration, Nasal Mucus, Menses, and Lochia—Effects of Snuff Taking—Retained Secretions—Diseases produced by Retained Bile, Feces, Urine, and Milk—Secondary Effects of Retained Secretions—Exercise—Diseases produced by the Abuse and by the Neglect of Exercise—Effects of want of Exercise on Animals—Stalled Oxen and Fatted Geese—Sleep—Anologous Effects to those of Food and want of Exercise—Diseases produced by too much Sleep—Diseases produced by too little Sleep.

Arsenic kills by paralyzing the brain, the heart and the stomach; it acts on the nervous system and not by inflammation. Its effects are too quick to be attributed to the latter. In a small dose it produces tetanus, in a larger, not tetanus but inflammation, but in a still larger dose, it kills at once without either; in this respect it resembles cholera. The part of the intestinal canal which, after the stomach, is most affected by the inflammation produced by arsenic, is the lower part of the rectum; and this is the case at whatever part of the system the poison may be introduced. On the other hand, the inflammation from corrosive sublimate, however introduced, affects chiefly the upper part of the intestinal tube. Baillie and Jager noticed this difference between arsenic and corrosive sublimate; a difference which illustrates the doctrine of specific irritabilities. For the same reason, if we wash our hands in a decoction of aloes it acts on the rectum, because the irritability of the latter is adapted to its influence.

The pain arising from arsenic is not inflammatory but spasmodic. I poisoned a dog with it, and the animal relieved the pain by pressing the abdomen against a projecting object. A poison must not necessarily be absorbed in order to produce its effect; for it may act by sympa-

thy, the stimulus being conveyed probably by the respiratory nerves. I question whether the poison of hydrophobia is absorbed, for it always produces a local disease, before the constitutional effects manifests themselves, although the wound may have healed. The following is a tabular view of poisons, adapted to the "physiological classification of diseases." (See the London Medical and Surgical Journal, Vol. 6,—No. 148, Page 551). It is divided into three parts.—1, Diseases, and the principal poisons which produce them. 2, Poisons and the principal diseases which they produce. 3, Principal tests of poisons.

PART I.

DISEASES, AND THE PRINCIPAL POISONS WHICH PRODUCE THEM.

Organic Diseases.

Bronchitis.—Chlorine.

Inflammation of the gullet.—Viruses, meloe, atropa, euphorbia, aconitum, ranunculus, iodine, oxalic acid, sulphuric acid, nitric acid, ammonia, lime, potassa, powder of arsenic, powder of mercury.

Gastro-enteritis.—Viruses and venoms, meloe, honey, atropa, datura, strychnos, conium, cicuta, colchicum, laurus, euphorbia, hydrocyanic acid, aconitum, helleborus, ranunculus, digitalis, cucumis, momordica, menispernum, juniperus, veratrum, agaricus, iodine, chlorine, oxalic acid, phosphorus, sulphuric acid, hydrosulphuric acid, nitric acid, ammonia, lime, baryta, potassa, powder of zinc, tin, arsenic, antimony, copper mercury silver, and gold.

Cystitis,—Meloe, arsenic, mercury.

Glossitis.—Arum, oxalic acid, sulphuric acid, nitric acid, powder of arsenic and mercury.

Urticaria.—Viruses, datura.

Phlegmasia dolens.—Viruses and venoms.

Arachnitis.—Viruses and venoms meloe, honey, alcohol, cicuta, colchicum, laurus, helleborus, veratrum, agaricus, carbonic oxide, sulphurous acid, powder of antimony.

Jaundice.—Viruses and venoms.

Dysentery,—Cucumis, helleborus, juniperus, arsenic.

Catarrh.—Viruses.

Ptyalism. — Digitalis, iodine, nitric acid, powder of mercury and gold.

Hæmoptysis.—Chlorine.

Hæmatemesis. — Meloe, oxalic acid, sulphuric acid, nitric acid, powder of arsenic, and mercury.

Hæmorrhois.—Meloe, cucumis, momordica, juniperus.

Hæmaturia.—Meloe.

Purpura.—Venoms.

Tympanites. —Agaricus, Powder of arsenic.

Pneumatosis.—Venoms.

Functional Diseases.

Colic.—Powder of lead.

Priapism.—Meloe, datura, Powder of arsenic.

Tetanus. — Venoms, secale, datura, strychuos, brucia, cicuta, hydrocyanic acid, aconitum, ranunculus, Powder of arsenic, antimony and lead.

Insanity,—Meloe, hyoscyamus, atropa, datura, conium, aconitum.

Delirium tremens.—Lolium, alcohol, hyoscyamus, atropa, datura, nicotiana, powder of mercury.

Epilepsy.—Viruses, honey, secale, nicotiana, conium, cicuta, colchicum, laurus, hydrocyanic acid, papaver, helleborus, digitalis, arum, memispernum, veratrum, agaricus, carbonic oxide, phosphorus, hydrosulphuric acid, nitrous oxide, baryta, powder of arsenic, antimony, lead, copper, mercury, silver, and gold.

Syncope.—Atropa, nicotiana, powder of mercury.

Amaurosis. — Hyoscyamus, atropa, datura, cicuta, carbonic oxide.

Idiotism.—Datura, aconitum.

Nervous apoplexy.—Secale, alcohol, hyoscyamus, atropa, datura, nicotiana, strychnos, brucia, conium, cicuta, laurus, hydrocyanic acid, papaver, digitalis, agaricus, carbonic oxide, carburetted hydrogen, sulphurous acid, hydrosulphuric acid, nitrous oxide, baryta, powder of arsenic, antimony, lead, copper, mercury, and silver.

Local palsy.—Powder of lead.

PART II.

POISONS, AND THE PRINCIPAL DISEASES WHICH THEY PRODUCE.

Animal Poisons.

Capra, bos, sus, ornithorrynchus.—phlegmasia, dolens, tetanus.

Phasianus.—Gastro-enteritis.

Rana, cohiber, crotalus, boa.—Gastro-enteritis, phlegmasia dolens, arachnitis, jaundice, purpura, pneumatosis.

Balistes, tetrodon, muræna, coryphœna, spams, clupœa.—Inflammation of the gullet, gastro-enteritis, urticaria, arachnitis, jaundice, catarrh, epilepsy.

Meloe.—Inflammation of the gullet,

gastro-enteritis, cystitis,, arachnitis, hæmatemesis, hæmorrhois, hæmaturia, priapism, insanity.

Apis (honey).—Gastro-enteritis, arachnitis, epilepsy.

Aranea, scorpio, cancer, scolopendra.—Gastro-enteritis, phlegmasia dolens, arachnitis, jaundice, purpura, pneumatosis.

Ostrea mytilus.—Inflammation of the gullet, gastro-enteritis, urticaria, arachnitis, jaundice, catarrh, epilepsy.

Vegetable Poisons.

Secale.—Gastro-enteritis, tetanus, epilepsy, nervous apoplexy.

Lolium. — Gastro-enteritis, delirium, tremens.

Hordeum (alcohol).—Arachnitis, delirium tremens, nervous apoplexy.

Hyoscyamus.—Insanity, delirium, tremens, amaurosis, nervous apoplexy.

Atropa.—Inflammation of the gullet, gastro-enteritis, delirium, tremens, syncope, amaurosis, nervous apoplexy.

Datura. — Gastro-enteritis, urticaria, priapism, tetanus, insanity, delirium, tremens, amaurosis, idiotism, nervous apoplexy.

Nicotiana.—Gastro-enteritis, delirium, tremens, epilepsy, syncope, nervous apoplexy.

Strychnos.—Gastro-enteritis, tetanus, nervous apoplexy.

Brucia.—Gastro-enteritis, tetanus, nervous apoplexy.

Conium. — Gastro-enteritis, insanity, epilepsy, nervous apoplexy.

Cicuta. — Gastro-enteritis, arachnitis, tetanus, epilepsy, amaurosis, nervous apoplexy.

Colchicum. — Gastro-enteritis, arachnitis, epilepsy.

Laurus.—Gastro-enteritis, arachnitis, syncope, epilepsy, nervous apoplexy.

Euphorbia.—Inflammation of the gullet, gastro-enteritis.

Amygdalus (hydrocyanic acid).—Gastro-enteritis, tetanus, epilepsy, nervous apoplexy.

Papaver.—Epilepsy, nervous apoplexy,

Aconitum.—Inflammation of the gullet, gastro-enteritis, tetanus, insanity, idiotism.

Helleborus. — Gastro-enteritis, arachnitis, dysentery, epilepsy.

Ranunculus. — Inflammation of the gullet, gastro-enteritis, tetanus.

Digitalis.—Gastro-enteritis, ptyalism, syncope, epilepsy.

Arum.—Glossitis, epilepsy.

Cucumis.—Gastro-enteritis, dysentery, hæmorrhois.

Mormordica.—Gastro-enteritis, dysentery, hæmorrhois.

Menispermum.—Gastro-enteritis, epilepsy.

Juniperus.—Gastro-enteritis, dysentery, hæmorrhois.

Veratrum.—Gastro-enteritis, arachnitis, epilepsy.

Agricus.—Gastro-enteritis, sympanites, epilepsy, nervous apoplexy.

MINERAL POISONS.

Iodine, Hydriodate of potash.—Inflammation of the gullet, gastro-enteritis, ptyalism.

Chlorine.—Bronchitis, gastro-enteritis, hæmoptysis.

Carbonic oxide, carbonic acid.—Arachnitis, epilepsy, amaurosis, nervous apoplexy.

Oxalic acid, oxalate of potash.—Inflammation of the gullet, gastro-enteritis, glossitis, hæmatemesis.

Carburetted hydrogen.—Nervous apoplexy.

Phosphorus.—Gastro-enteritis, epilepsy.

Sulphurous acid.—Arachnitis, nervous apoplexy.

Sulphuric acid.—Inflammation of the gullet, gastro-enteritis, glossitis, hæmatemesis.

Hydro-sulphuric acid, hydro-suphuret of potash. — Gastro-enteritis, epilepsy, nervous apoplexy.

Nitrous oxide.—Epilepsy, nervous apoplexy.

Nitric acid, nitrate of potash.—Inflammation of the gullet, gastro-enteritis, glossitis, hæmatemesis.

Ammonia.—Inflammation of the gullet, gastro-enteritis.

Lime.—Inflammation of the gullet, gastro-enteritis.

Baryta, carbonate of baryta, muriate of baryta.—Gastro-enteritis, epilepsy.

Potassa, subcarbonate of potash.—Inflammation of the gullet, gastro-enteritis.

Sulphate of zinc.—Gastro-enteritis.

Muriate of tin.—Gastro-enteritis.

Black oxide of arsenic, arsenious acid, arsenite of potash, arsenic acid, arseniate of potash, arsenuretted hydrogen, sulphurets of arsenic.—Inflammation of the gullet, gastro-enteritis, cystitis, glossitis, dysentery, hæmatemesis, sympanites, priapism, tenanus, epilepsy, nervous apoplexy.

Oxide of antimony, tartrate of antimony·—Gastro-enteritis, arachnitis, tetanus, epilepsy, nervous apoplexy.

Oxide of lead, carbonate of lead, acetate

of lead.—Colic, epilepsy, tetanus, local palsy.

Carbonate of copper, acetate of copper, sulphate of copper. — Gastro-enteritis, epilepsy.

Oxide of mercury, muriate of mercury. —Inflammation of the gullet, gastro-enteritis, cystitis, glossitis, ptyalism, hæmatemesis, delirium, tremins, epilepsy, syncope.

Nitrate of silver. — Gastro-enteritis, epilepsy.

Muriate of gold. — Gastro-enteritis, ptyalism, epilepsy.

PART III.

PRINCIPAL TESTS OF POISONS.

Ferrocyanate of potash—morphia—gallic acid—hydriodate of potash—hydrochloric acid — perchloric acid—sulphuric acid—hydrosulphuric acid—hydrosulphuret of ammonia—nitric acid—ammonia—lime—potassa—carbonate of potash—chromate of potash—phosphate of soda—zinc—iron—permuriate of iron—proto-sulphate of iron—tin—proto-muriate of tin—arsenite of potash—acetate of lead—sulphate of copper—ammoniaco—sulphate of copper—permuriate of mercury—protonitrate of mercury—nitrate of silver — ammoniaco-nitrate of silver—muriate of gold—muriate of platinum.

4. *Sympathy.*—It is to sympathy that Roupil, in his review of Broussais, attributes critical discharges. He considers them to be, not the cause, but the effect of the cessation of diseased action. This is the best account that has been given of them. Scrofula was attributed to sympathy by the oldest Egyptian practitioners; and Broussais and Marshal Hall have lately done the same. Diseases of the skin have been referred to the same cause, by Hippocrates, De Haen, Abernethy, Alibert, Bateman, &c. Insanity was long ago attributed to it, and the opinion is very prevalent now. Rheumatism and gout were referred to it by Hoffman and Scudamore, and chorea by Sydenham. Hydrocephalus, in its first stage, is very closely imitated by worms in the intestinal canal, which shows the sympathy between the intestines and the brain. Ophthalmia, tetanus, hysteria, scrofula, and tabes mesenterica, all furnish examples of sympathy. The stomach has the respiratory system of nerves very largely distributed on it, and therefore its extensive sympathy. The skin, for instance, is very irritable after a debauch, so that it is generally cut during the operation of shaving. It may be asked why the lungs do not sympathize more with the stomach, seeing how closely they are connected by the nerves which are distributed to them. But we must look, not only at the mode of communication, but also at the character of the original irritation.

Every disease has been referred to gastro-enteritis; but we cannot, with propriety, refer all diseases to gastro-enteritis under the same form. It may be the key to their pathology; but it is not their pathology altogether. I go a long way with Broussais; but his views are too exclusive. I think diseases may arise from different causes.

Fevers, from local irritation, furnish one of the best examples of sympathy, as an exciting cause of disease. Indeed, it is a question whether fevers are not always sympathetic. They were long thought to be idiopathic; but Fordyce observed that all parts of the body were not affected alike by them. These local affections, however, were thought to be the consequences, and not the cause of the fever, till Beddoes and Clutterbuck attributed fever, in every case, to a local cause. Broussais followed up this view in 1808. Hunter had remarked that every cause tending to produce fever was efficacious in the direct ratio of its connection with the stomach and bowels. Mills, in his work on the propriety of bleeding in fever, referred the disease to different organs, in different cases; and Armstrong, Cheyne, Duncan, Graham, and Bateman supported this view.

5. *The passions.*—The passions act in the same way as sympathy, in producing disease, but they differ in having the primary irritation always in the brain. The division of the passions into stimulant and sedative is ill founded. There is no question but they all act as stimulants. It is only their permanent effect we have to consider, in the production of disease.

The diseases which have been attributed to the passions are arachnitis, which produces serous apoplexy, incubus, insanity, idiotism, nervous apoplexy, catalepsy, cynanche tonsillaris, gout, biliary calculi, and jaundice. It was well known by the earliest authors, that jealousy will produce jaundice. Diarrhœa and dysentery do not take place merely from the relaxation of the sphincter ani, but from fear. Polysarcia, hæmoptysis, and epistaxis, are also attributable to the passions. The last is so common a result of

anger, that the Hebrews thought the seat of that passion was in the nose. The following diseases are likewise referred to the passions :—scorbutus, angina pectoris, palpitation of the heart, syncope, dyspepsia, chlorosis, anemia, palsy of the tongue, epilepsy and hysteria.

6. *Pressure.*—The principal diseases to which pressure gives rise are inflammation, induration, atrophy, adhesion of contiguous surfaces, strictures, &c.

7. *Blows.*—These may give rise to a great variety of diseases, which may be included under the terms fractures, dislocations, contusions, inflammation, hernia, extravasation of blood, &c.

8. *Wounds.*—According to Abernethy and the best writers, wounds and other causes which produce tetanus act first by causing gastro-enteritis, and afterwards tetanus by sympathy. It may be objected to the sympathetic effects of wounds and other causes, that less sympathetic effects are sometimes displayed by parts, which are the most connected by nerves. But in this case the primary irritation may not be adapted to the specific irritability of the part secondarily affected.

Some venoms and viruses are able to abrade the cuticle, and thus to affect the system ; but most of them do not act when applied to the mucous membrane of intestines or lungs, or to the cuticle ; but must be introduced beneath the latter. They come therefore to be considered under the head of "wounds." Poisons which act when swallowed, have already been spoken of under the head of "aliment."

All fatal venoms kill by nervous apoplexy. The principal venemous animals are the snakes of India, the viper, the wasp, the bee, the gnat, and the scorpion. The bite of the tarantula gives a tendency to a kind of convulsion, which has been represented to be like dancing. The principal viruses are gonorrhœa, lues venerea, molluscum, vaccina, porrigo, variola, scabies, frambesia, hospital gangrene, and hydrophobia. There is also great danger from dissection-wounds ; owing to the secretions having been vitiated when dying. Gangrene acts like a poison ; the dead mass being in contact with living parts.

The diseases produced by these viruses, are said to be from vitiation of the blood ; but no change can be detected in it ; nor will such blood produce similar diseases by innoculation. Jesse Foot said that syphilis might be communicated by innoculation with the blood ; but Hunter proved that it could not. In the cases which have been reported of children being born affected with syphilis, I think it was not really that disease, or else that it was communicated from the passages of the mother, while coming into the world, or afterwards from the nurse, not by the milk, but by infected nipples. If these viruses were in the blood, all parts of the body would be attacked, and the latent stage which occurs in many of the diseases caused by them is incompatible with the theory of their being produced by vitiation of the blood. Hydrophobia has sometimes been produced by pure fright, and therefore other diseases of the same kind may. Hunter said that the innoculated small-pox was milder than the natural, because less of the poison was introduced, but we know how much is introduced, or if any at all. Adam says, that when the small-pox is taken naturally it proves the existence of a predisposition to the disease, which co-operates with it instead of resisting it, as the constitution does when the disease is forced on it by innoculation. This is a good explanation ; but, probably, the true one is, that from the concentrated state in which the poison is introduced by innoculation, the contraction of the vessels is so great, as to be incompatible with the long continuance of that contraction. In this respect it resembles snuff, while asarum, which is a milder stimulus, has a longer latent stage. The manner in which cow-pox secures from small-pox is probably by destroying the specific irritibility of the parts affected. The poison of the viper has been proved by Fontana to be quite bland.

9. *Suppressed secretions.*—If secretions are suppressed, it implies that there is increased irritation, and this, by sympathy, may cause irritation in another part. Suppressed perspiration may produce catarrh, suppressed nasal mucus, ophthalmia, and serous apoplexy, suppressed menses, hemorrhage from some other part, and suppressed lochia, insanity. Persons long accustomed to snuff, may go mad if they leave it off suddenly, for the constant discharge of mucus implies diminished irritation ; and, if it be suddenly stopped, it may give rise to an increased irritation, which the parts cannot bear.

10. *Retained Secretions.*—The principal of these are bile, feces, urine, and milk. Retained bile may give rise to jaundice, retained feces to dysentery, hæmorrhoids, and prolapsus ani ; retained

urine to calculi, or paralysis of the bladder; and retained milk to inflammation of the mamma. The secondary effects from retained secretions may be, from the urine, arachnitis, and from the feces, insanity, epilepsy, chorea, hysteria, and tenanus.

11. *Exercise.*—If, during expiration, all the functions of the body are performed with greater vigour, it may be wrong, in the case of diseased lungs, to expose them to this greater stimulus. Phthisical lungs may be strengthened by moderate exercise, but may become rapidly diseased if the exercise be violent. Too little exercise will give rise to scorbutus, chlorosis, &c. Stalled oxen are frequently found to have biliary calculi, and if geese are confined, their liver becomes diseased.

12. *Sleep.*—Too much sleep causes polysarcia, angina pectoris, apoplexy, and the other diseases which are occasioned by too much food. Too little sleep has the same effect as too much exercise. It leads to insanity, fever, and all the diseases which flow from too much excitement.

LECTURES ON SURGERY,

BY

JOHN HUNTER, F.R.S.

OF THE BRAIN AND NERVES.

Passive and active states of the Brain—too much influence attributed to the Brain in the bodily actions—actions of the Brain—five modes of impression on the Nerves, or the Senses.—Voluntary action becoming involuntary, as in Chorea—Of Sensation—Connexion of the Brain and Nerves with Life—Of Sleep—its importance in the animal œconomy.

We have hitherto traced animal matter from its change from common matter to animal substance, the particles of which have possessed such an arrangement as to produce life; still it has other modes of arrangement, out of which arise other modes of action, and which only take place in some animals. These are the brain and nerves, which produce sensation, out of which arise mind and reason; for the mind could not be formed, nor could we reason without sensation; it being always about some object that the mind is affected, or that we reason.

The brain is passive in sensation, only receiving the impression from the nerves, according to their actions called so many sensations.—In mind it is active. Mind arises from a peculiar quality in the sensation, being expressive of some quality in the body which is the object of sensation, and which gives an action to the brain answering to those qualities, as agreeable and disagreeable, with all their different species, as love, joy, hatred, anger, &c.; which actions of the brain, or states of the mind, become the causes of particular modes of action in the body affecting both involuntary and voluntary actions. The heart beats quick or slow according to those states; sickness may be produced; purging, contraction of the bladder will take place; the voluntary muscles hardly obeying the will, but performing involuntary actions, according to the state of the mind.

Reason, by influencing the will becomes the cause of the voluntary actions, and by this connexion all these principles can affect one another.

Now the brain appears to be capable of two modes of action, and out of these arises every property of the brain. We may call the actions of the brain mind; objects affect our senses so as to form a peculiar state of mind, this I call mental impression. Again, the mind can reason and exercise volition respecting objects. The former is involuntary, and belongs also to brutes: the latter is voluntary. For instance, I am challenged to fight a duel, volition and reason determine me to go to it; but when at the place, my joints tremble, my stomach turns sick; this is the effect of mental impression or feellings of the mind. The two operations are very different, and in general the feelings of the mind, if strong, will prevent all reasoning.

Much more has been ascribed to the brain and nerves than they deserve. They have been thought to be the cause of every property in an animal body; that independent of them the whole body was a dead machine, and that it was only put in action by them.

But although their actions are absolutely necessary in the machine, they are not so universally so as has been imagined. They are not the cause of growth, nor do they even preserve a part from death, although the whole as a whole cannot live without them.

The nerves have but one mode of action, namely, that of conveying impressions; but this in two different directions, one from their extremities in the

body towards the brain, conveying impressions made on them to the brain, in order to excite actions suitable to these impressions; the other from the brain to the extremities, conveying the mandates of the will, &c.

The mode of action which is from the body towards the brain is of two kinds: one is the internal feel of the body, of perfection, imperfection, power, want, &c. The other is of those feelings of the body which are to call forth the powers of the will to perform what are called voluntary actions for the subsistence of the body, or to effect the actions which it cannot perform.

The actions of the brain towards the body are also of two kinds: one in consequence of the feelings or state of the mind at the time, whether the actions of fear, courage, anger, love, &c.; the other in consequence of the command of the will, called voluntary actions.

Those of the body to the brain are the first in order, for it is the receiving the impressions that gives rise to the others. Of the latter, the first are the feelings of the mind, and the second the will and its consequences, namely, voluntary actions, or all those actions directed principally to external objects, for which muscles are provided.

As the nerves are perfectly passive till impressed by external objects, no one could have any sensation except while an impression is made on some of the senses. Therefore a man could not feel that he exists but in thought; nor could he do that if he had never received impressions to think about, for thinking is no more than the memory of impressions put into order by the mind; nor should he have those actions which naturally arise from the brain till the brain makes the impression on the nerves.

The impression is made on the body, but the sensation is in the brain, for the effect (of a person's feeling in a part to which a nerve is distributed) on cutting or otherwise injuring a nerve, proves that sensation is in the brain and not in the body; for if it was in the body, the sensation would be referred to the part injured; but sensation being in the brain and brought from the brain by the action of the nerves, or sensation being formerly in the brain, the action of the nerves we find is referred to the beginings of that action by the combination of the other senses; otherwise it would be only in possession of the sensation without any reference; the reference produces a feeling in the mind receiving sensation by joining it with the seat of impression.

There are five modes of impression on nerves, or perhaps rather five modes of construction of parts, which are adapted to so many kinds of impression. These are called the five senses; but there are a great many kinds of sensation conveyed to the brain or sensorium.

The five senses are no more than parts constructed so as to be capable of receiving impressions, or so many properties of matter. Perhaps all are capable of receiving the impression of touch, or pressure, if it could be applied to all, so that every nerve may be said to feel.

But besides pressure, there are other properties of matter. Many bodies have qualities besides being tangible; some only when in solution making an impression on the tongue and causing taste; the same bodies when thrown into vapour give smell; air, besides being tangible, has a peculiar motion, arising from its repulsive quality, called vibration, which strikes the ear and produces hearing. There arises another property in another species of matter, called light, which we know less of than any other, which has a power of pervading some bodies called transparent, and gives us the sensation of sight; and from peculiarity in the formation of those transparent parts light becomes more determined in its direction.

The sensation of the glans, penis, tickling, and itching would seem to belong to feeling. The first, however, is certainly a different mode of action of the nerve from common feeling, and both itching and tickling require a particular mode of impression to produce them.

An animal can bear with ease a certain quantity of common sensation, which quantity being particularly applied will give pleasure; but if common sensation be increased beyond certain bounds, it gives great pain; so that pain is no more than an increased sensation, such as the sense of violence committed to a part.

All the five senses are subject to the same mode of sensation when applied in the same way, namely, by touch, and if the impression is to strong, give the sensation of pain. For instance, if the retina be hurt it gives pain, but not light; if the ear be hurt it gives pain, but not sound; if the nose be hurt it gives pain, but not smell. But there are exceptions to the two first, for a blow on the eye often produces light, and on the ear sound. And

besides, these senses are subject to diseases, here the sensation often arises without impression from without.

The common actions of the body, that commonly arise from the will, often become involuntary, as in palsies, St. Vitus's dance, &c.; but I suspect that these actions still arise from the brain or mind, though not the will, because they do not take place in sleep; nor do we find the same diseases in any animal but the human.

Our senses being such, have their peculiar degree of sensation and their peculiar mode of receiving impressions, and when this is carried to too great a length, they become extremely uneasy: but it is an uneasiness different from pain; it is the peculiar sense carried beyond what the mind can bear.

Sensation is in proportion to the impression made on a part, joined with the susceptibility with which the nerve is ready to act. But for distinct sensation two things are necessary, namely, time and space. It is necessary that the impression should be some time in performing, because an impression may be too quick to excite sensation, or quicker than any action in the nerves, such as a ball passing through a man's body without his feeling it; but he is capable of feeling it afterwards, which arises from an action of the injured part, not from the violence itself. Neither must the time be too long, for an impression or an injury may be so slow as not to affect the nerves at all, so as to throw them into any action. A person, for instance, shall become dropsical, and the belly shall fill with water so gradually as to give no pain from the stretching of the muscles, peritoneum, &c.; but if you were to attempt to stretch the belly of another person in a given time to such a degree, it would produce pain in proportion to the violence.

The space must also be determined, for a given quantity of impression may be concentrated so as to be within bounds of sensation; for it would appear that a single nerve, or a very few nerves, are not capable of conveying sensation, however affected; for instance, a given quantity of light may be concentrated into such a small point as not to be seen.

Every sensation, every mode of sensation, and every sense appear to depend on the quantity of nerves acted upon, and in a given time; therefore we have a great quantity of nerves going to parts that are allotted for strong sensation, that no impression may be made without affecting a great many nerves at the same time.

The uneasiness arising from too strong impressions we can easily assign a reason for, as it becomes a means of avoiding that violence; but itching and tickling appear not to be so very necessary: however they must be of service in the animal œconomy. I can conceive itching becomes a cause of our keeping ourselves clean, free from vermin, &c., and becomes a substitute for pain: it naturally leads us to the cure, which gives pleasure; and the performance of it is almost similar to the indulgence of our natural appetites.

This principle of sensation is our director with respect to all other external actions, but has no absolute power over the internal œconomy of the machine. But this first principle we shall find can influence the others very materially, and thus a compound principle will be produced.

The brain and nerves also give the body a consciousness of its own muscular powers. This is more remarkable in other animals than in man: thus, a horse will at once know what he can leap, and will leap no more, nor attempt it; and, indeed, a man can for the most part tell. A nobleman, (the Duke of Queensbury) who had broken his tendo Achillis was fearful of walking about his room; but I advised him to do it as well as he could, assuring him that his gastrocnemus muscle, knowing its own business better than its master, would refuse to act if he walked, and that the action would be performed by other muscles. This he found to be true. But in the night time, I told him I could not be answerable for what his muscles would do, therefore I thought proper to put the leg into a fit posture and secure it by a bandage.

As the brain and nerves are composed of animal matter, and as that animal matter has life, or the first principle of action, in common with all the other matter composing the whole body, there arises necessarily an intimate connection between those principles, and, though totally different in their peculiar actions, yet they become blended with each other, so that one seldom acts perfectly unless the other is in perfect order, each of them calling on the other to do its part; and when both these principles are in vigour and in perfect harmony the whole machine is in health.

Life is coeval with the existence of the animal or vegetable matter itself; but sensation is a later principle, does not take

place until birth, when a new œconomy is set up, in which sensation is called in by the living principle for the support of the whole, beginning first in the stomach by sympathy, and then going on in a series of actions. These compound actions therefore, cannot take place until sansation takes place; and it is reasonable to suppose that a child in the womb has no sensation, for it is just as well formed in all its parts without brain as with it, and the nerves are indebted to the brain for their formation.*

[Mr. Palmer, in his edition of Hunter's Lectures, offers the following remarks:—"This statement is incorrect. The nerves may exist without the brain or spinal marrow, which are accessory not the fundamental parts. The same law obtains in regard to the heart and blood-vessels: and indeed it may be observed generally in regard to the progressive developement of the higher animals, that at first they follow the type of inferior animals, but afterwards advance to those which are still higher and higher in the zoological scale. Hunter in the main was well acquainted with this law of developement as regards the higher animals, as will appear from the following passage, in which we may remark that he has anticipated many of the leading discoveries on this subject by modern anatomists. The passage occurs in the introduction to the description of the drawings relating to incubation. 'If we were capable,' he says, 'of following the progress of increase of the number of the parts of the most perfect animal, as they first formed in succession, from the very first, to its state of full perfection, we should probably be able to compare it to some one of the incomplete animals themselves, of every order of animals in the creation, being at no stage different from some of those inferior orders; or, in other words, if we were to take a series of animals from the more imperfect to the perfect, we should probably find an imperfect animal, corresponding with some stage of the most perfect.' (Hunt. Cat., Phys. Series, vol. ii. p. iv.) Many other passages might be adduced which evince that Mr. Hunter's extensive acquaintance with comparative anatomy had enabled him to deduce the true principles which regulate the formation of the body and the co-existence of the different systems of parts in the same individual organism."]

But the moment a new mode of action takes place, actions arising from sensation must be performed for the support of this; and an animal must die if these sensations are not produced, which cannot be produced if there is no brain*.

Actions arising from the union of the two principles, life and sensation, are extremely evident; being all those actions which constitute a state of mind, or those feelings of the mind from which instinct arises.

Sleep.—A singular result of our being possessed of the sensitive principle is sleep. Perfect sleep is an annihilation of the power of present sensation, of the power of thinking, and all traces of the past, or what we call memory. We find that there is, of course, a cessation of all voluntary actions; the will itself is in every respect at perfect rest, and we are at this time, in respect to ourselves, in a state of non-existence. But sleep has its degrees; perhaps in all cases there is a considerable loss of these principles, especially sensation; but the effects of sensation are not always lost, namely, those operations of the mind which produce actions which are very nearly voluntary. During sleep, therefore, the mind may be thinking, which forms what we call dreams; but as our present sensations do not become directors of those actions which the mind is employed about, no such action takes place as the mind forms to itself. It is even possible to dream when awake; it is only necessary for the thinking power to take possession of the mind, and proceed with an action with which the present sensation has nothing to do, so that a person neither sees objects, hears sounds, nor feels any thing that touches him; and when the mind ceases to act and sensation returns, we call it a dream. Now, whenever the body loses the consciousness of its own existence, it may be called a waking dream, and this is often the case when people are in deep thought. Sleep appears to be the sensitive, what I have already described to take place in the living principle when I mentioned my own case; but that arose from disease, while sleep is necessary.

When both these principles undergo a cessation of their actions it is called a swoon. Here there is a cessation of all actions which naturally arise in the body, but still a capability of having them reproduced. Now, in a fainting fit there

* Mr. Hunter must have been aware of many examples of fœtuses without brains which have lived for some time after birth. He must here mean the medulla oblongata, without which respiration cannot take place.

seems rather a cessation of the actions of sensation, the animal becoming totally insensible to itself; but in a swoon we have this carried further: the cessation takes place not only in the sensitive but in the living principle itself, for we shall have people fall into a trance or swoon, and they shall remain in it without any kind of motion,—respiration, circulation, digestion, and every operation of the body at total rest; and if the disease, or the cause of cessation of that action, should continue a long time, they may lose the power of reproducing this sensation again. Fainting, from bleeding, fear, &c., is a swoon in a certain degree, for these principles are diminished, especially the sensitive. Sleep is not only a cessation of voluntary action, but produces cessation of involuntary action of voluntary parts, arising from their diseases, as in St. Vitus's dance, &c.

Sleep is of such material consequence to the sensitive principle of the constitution—namely, sensation, mind, and will—that it may be said to constitute one third of its duration. As it is only an annihilation of sensation and all its consequences, one might suppose that it was of little consequence to the machine; but it is as essential to it as food.

Sleep, or rather a cessation of sensation, thus taking place, while the action of life is going on, shows that there must be a peculiar structure, and a principle arising out of that structure superadded, making a compound which is endued with life; for life for a time can go on without sensation, but cannot always go on without it.

Sensation, then, is a fatigue to life; and in proportion to the exertion of sensation, in a given time, the sooner is life wasted. For this reason, when we are in health, sensation stops at proper times; life then appears at ease. This slighter effect of health is often increased preternaturally, as in cases called lethargy.

A PRACTICAL VIEW
OF
LYTHOTRITY:
WITH REMARKS ON
THE LATERAL OPERATION OF LITHOTOMY.

BY MR. ASTON KEY.

(Continued from page 267.)

The chair which I use for this purpose is constructed on the principle of Heurteloup's "lit rectangle." It is made in the form of a common couch, with the back inclined at an angle of 45 degrees. The position of the hind legs enables the whole to be inclined backwards by a very gentle force applied at the end to which the vice is fixed: the force of one hand is sufficient to raise it, even with the additional weight of the patient, as the two extremities of the chair are nearly in equilibrio when the fore-part is somewhat raised. By these means the operator is enabled to dispense with an assistant, at least in sounding; as he can, after introducing the catheter with one hand, throw the patient back with the other. The shock communicated to the stone in the patient's bladder can be increased at pleasure; but, in sounding, not much jar is required to dislodge it: the sudden change of position alone is sufficient to make it fall into the back part of the base; where it is readily felt, by carrying the catheter at once backward, and raising the handle nearly as much as the cervix vesicæ will permit. In dislodging fragments, the chair is especialy serviceable. The force with which the end can be thrown back on the floor, will detach any fragments that may couch behind the base of the prostate. Besides being admirably adapted to the purpose for which it is principally intended, it is found useful for other surgical purposes in which a sofa may be required. To the lithotrotist, such a chair or bed is indispensable: by its aid, he is enabled to discover the calculus more readily, to remove the fragments with more certainty, and to break the stone with more safety and less suffering to the patient.

The sensation which a stone communicates cannot well be mistaken. The sense of touch alone is generally sufficient to decide the presence of a calculus: if there exist a doubt, the ear should be appealed to; and the operator should not be satisfied till he has heard as well as felt the contact between the metallic instrument and the stone. The touch may sometimes mislead when there is a fungus in the bladder, or a portion of the mucuous coat morbidly thickened; in both which cases the symptoms closely resemble those of stone in the bladder. But, in these forms of disease, the ear cannot deceive the surgeon; and the absence of sound, when the foreign body is struck, is sufficient to decide against the existence of calculus. I have found, sometimes, when the friction of the sound over the foreign substance has been equivocal, that the injection of oil into the bladder has removed the deceptive sensation which the contact of metal with a

fungoid mass surrounded by water will produce. An instance occurred not long since, of a bleeding fungus being mistaken for a calculus. The patient was sounded more than once, by an experienced surgeon, and pronounced to have stone: he was placed under the care of a lithotritist, who fixed a day for the operation. The patient, however, became so ill before the day arrived, that it was necessary to defer the operation. On his death, which took place in a few days afterwards, no stone was discovered in the bladder; but a bleeding fungus, of considerable size, was found attached to the mucous membrane. The occurrence of a cyst enveloping the stone in the bladder, is often held out as likely to mislead the surgeon, and to prevent that satisfactory evidence being obtained that a careful operator would wish to have before proceeding to the operation. The occasional presence of a cyst around a calculus cannot be denied. In a case on which Mr. W. Wickham operated, a something was removed with the stone that resembled a cyst formed by adhesive matter: it was so thin as not to prevent a distinct sensation being communicated by the sound. Such cases are very rare. The stone may also be lodged in a sac formed by a protrusion of the mucous coat between the muscular fibres of the bladder. Such a variation in the position of the stone is seen sometimes. We have a specimen of it in the Museum; but, like the former, it is a very unusual variety in the situation of a vesical calculus. I have never met with such accidents, either in hospital or private practice, nor have I witnessed them in that of my colleagues.

The instruments that are used for the discovery of a calculus are two—the steel sound and the silver catheter. Each has its advantages. The latter has become the more general instrument, since the introduction of lithotrity, on account of its combining the office of the sound with that of injecting the bladder. The best form is that of Heurteloup's catheter: the shortness of its beak enables the surgeon to examine the bladder in all its parts; to reach even its deepest recesses behind an enlarged prostate gland; and to measure, with some degree of certainty, the depth and form of the stone. The beak can be turned in all directions, so as to sweep the lateral parts of the base, as well as the most depending part of the cavity. The sensation, however, conveyed by the hollow silver tube is less distinct than that communicated by a solid steel instrument; and I have known instances where a sound or sensation of an equivocal character has been transmitted by the tube, and where all doubt has been removed by the more accurate impression given by the contact of the sound. Another disadvantage of the catheter is, the alteration that it produces in the course of the canal, by raising the prostate gland. This will be understood by contrasting the straight tube of the catheter with the curve of the sound. When the former is in the bladder, the part of it that lies in the prostatic portion of the urethra is a straight line; and when the hand is depressed, the prostatic portion is necessarily raised, and the *cul de sac* of the bladder anterior to the ureters is deepened. A small stone, or fragments, may then escape the touch of the catheter, unless they can be thrown backward into the base of the bladder. The common steel sound is free from this disadvantage: when the beak is in the bladder, its curved portion is in the prostate gland, and causes no distortion in that part of the canal; so that, as it enters the bladder, a small stone may be struck, over which the silver catheter would pass without touching it. If the bladder contains about an ounce of urine, which is sufficient to allow the sound to enter freely, the stone, however small, rarely eludes it. In the examination of persons suspected to be afflicted with calculus, I usually first employ the catheter, after injecting two or three ounces of warm water, and reclining the chair: and if I do not strike a stone, or if I meet with a something of the nature of which the silver tube fails accurately to inform me, I then allow some of the water to escape, and introduce a common steel instrument. In this way, the most exact information may be obtained of the presence of a foreign body: its size and form, as well as the existence of more than one, can be best ascertained by the catheter; but the sound and vibration are best communicated, in doubtful cases of small stones or fragments, by the solid steel instrument.

The size of the calculus forms of itself no objection to lithotrity. A large stone presents, however, several considerations for the surgeon to weigh, before he undertakes the operation. As the stone cannot be entirely crushed at one sitting, a patient with an irritable or an unsound bladder, becomes involved in most serious danger by the operation being hastily adopted. A large stone broken up into many irregular fragments, all crowded by the

contractions of the bladder against the irritable and inflamed cervix, causes excessive efforts to void the urine, and even inflammation of the mucous surface. Under such circumstances, the repetition of the operation becomes impossible, or highly dangerous; and the patient has to struggle through the stages of inflammation, with a bladder irritated by the lesser fragments. But if the bladder be free from disease, and not very irritable, it will bear the number of sittings required to break up a large stone, without much suffering to the patient, and with very little danger. The success of lithotrity, like that of most surgical operations, mainly depends on its subject. If the constitution be good, and the power of endurance great, difficulties of most unpromising nature may be overcome. We should therefore pay more regard to the general condition of the patient, and of his bladder, than to the size of the stone, and inquire minutely into the several circumstances likely to have an influence on the result of the operation.

One of the earliest cases in which I operated was that of a Mr. T——. of unhealthy constitution, much worn down by his continued sufferings, and by calculous affection of the kidneys. The stone was so large, that, taken with other circumstances, it induced a very experienced surgeon to give an opinion adverse to lithotrity. The patient's decided objection to lithotomy, however, left me no alternative; and by proceeding with caution, I broke up the stone, after not fewer than sixteen sittings. The irritability of his bladder decreased as the stone became diminished in volume and the fragments expelled. I know of no limits to the size of a calculus removeable by lithotrity, but the power of the lithotrite. If a powerful instrument can be brought to embrace it, and the organ be healthy, the operation may, as far as my experience goes, be attempted with propriety.

The different ages of patients to be submitted to the lithotrite or the knife are remarkably contrasted with one another. Whilst to youth and advanced age the latter is more suitable, the former is found to be generally better adapted to the middle period between puberty and the decline of life. We have seen, in speaking of lithotomy, that persons whose sexual organs are completely developed, are more liable to the accidents attending the use of the knife, than children whose organs are not yet evolved; or than the aged, whose irritability is on the wane. The full-grown healthy adult, on the contrary, presents all the conditions most favourable for crushing the calculus. The canal is sufficiently large to admit an instrument efficient from its size: the prostate gland also is usually healthy, and free from the enlargement of age; thus rendering the neck of the bladder, a part so important in the operation, little exposed to the dangers of inflammation. When there is a normal prostate gland, the operator may manipulate his instrument without risk of bruising or otherwise injuring this most sensitive of all the parts concerned in the operation. The urethra of such patients being more free, the fragments are expelled with less difficulty, and cause less pain in their expulsion, which is also materially assisted by a sound and vigorous bladder. At this age, also, inflammation, should it supervene, is more easily controlled than in the aged subject, who cannot well bear depletion. The warm bath and free venesection speedily arrest the inflammation of the mucous membrane of the bladder; but the old are soon depressed by the diseased action, as well as by the measures required for its suppression. Inflammation, however, is less likely to occur in such healthy subjects, where the parts are not mechanically injured by the operation, and when the patient has been prepared by dietetic and other prudential measures. The aged subject, however, is not less adapted to the operation than the younger adults, if he be free from the common accidents of age—as an enlarged prostate, accompanied with an irritable state of bladder. If the parts in the aged are sound, the operation is especially successful in them; as there is less irritability in the organs of generation, and less excitability of the general system. The urethra, also, is usually larger; and if the neck of the bladder be free, it allows fragments of extraordinary size to pass. I have in my possession a piece of calculus passed by an elderly gentleman, $8\frac{1}{3}$ lines in length, and $4\frac{1}{2}$ across: it is a piece of phosphatic calculus, broken off by the first application of the percussor, and rendered smooth at its angles and edges by undergoing attrition in the bladder for three weeks. It even passed without difficulty or pain. In the old subject, however, difficulties often present themselves in consequence of the change which the parts about the neck of the bladder undergo, and the unsound condition of the bladder itself consequent on these changes. The operation in such persons is rendered dangerous by the in-

flammatory disposition of the organ, and by the difficulty with which the fragments make their way through the prostatic portion of the canal.

The state of the bladder is perhaps, of all the circumstances that the lithotritist has to consider, the most important; and one on which the propriety of performing the operation will mainly hinge. Three conditions of this organ are necessary; and these must be ascertained, by preliminary observations and trials, before the operation is determined on:—1st, It must be capable of holding a sufficient quantity of water to facilitate the working of the percussor. 2dly, It must be free from that extreme irritability that often attends the latter stages of calculous disorders: and, 3dly, Not prone to inflammation, from slight excitement. In healthy persons, the bladder, even under the irritation of a stone, will allow several ounces of water to be injected into its cavity, without sustaining more than a slight inclination to eject it. Its retentive powers are not impaired in the early stages of the disorder: patients will go for many hours without any desire to empty the bladder, the only early symptom being a smarting, when the bladder contracts on the calculus. It is therefore rare to meet with any difficulty in injecting water sufficient for the purpose of giving space for the operation, among those who apply for advice soon after the symptoms have begun to declare themselves.

Even when, from the long-continued presence of the stone, the bladder becomes morbidly affected, and able to contain but three or four ounces of urine without an irresistible desire to expel it, much may be done, by treatment, to assuage the irritation of the mucous membrane, and tranquillize the muscular excitability. When the stone has been long resident in the bladder, and has produced a change in the mucous membrane and a copious discharge of phosphatic mucus, signs of extreme irritability come on, and almost seem to forbid any expectation of lithotrity being practicable. The desire to void urine is renewed every two hours, or oftener: the urine not only deposits a large quantity of dark-coloured mucus, but is cloudy, and loaded with small flakes of adhesive matter, the result of inflammation of the mucous lining: the pain in expelling the last few drops of mucus is intense. Such continued suffering at length affects the general health; and would seem, I say, to forbid the operation altogether. Frequently, however, will these formidable symptoms yield to a system of diet and medicine, and the patient by degrees be unexpectedly brought into a condition to bear the operation. Two summers ago, I was consulted by a gentleman who for more than three years had experienced symptoms of stone in the bladder; which had of late increased so much, as nearly to confine him to the house. I sounded him, and discovered a stone grasped closely by a very irritable and tender bladder. On injecting, or rather attempting to inject, a small quantity of water, he complained of excessive pain from the slightest pressure on the piston of the syringe; and I endeavoured in vain to overcome the resistance of the bladder. His urine was high-coloured, and loaded with a copious secretion of a dark bloody mucus: his pulse was quick, and tongue furred. The slight examination that I made of his bladder was followed by severe rigors and fever, which remained upon him for several days. So untoward a case appeared to hold out but little prospect of being benefited by lithotrity. He was ordered to employ a mild form of diet, to abstain from all fermented liquors, and to take saline medicines, with the alkali predominating. In three months, his symptoms had so far improved, and the irritability of the bladder was so much diminished, that I crushed four calculi with very little disturbance of his system, and with decided amelioration of his vesical irritation. Instead of the mucous secretion being increased by the operation, or the desire to void urine becoming more frequent, both these symptoms were relieved; and the fragments of lithic acid were entirely discharged from the bladder, with as little irritation as I ever witnessed after an operation. An opinion cannot be formed of the real condition of the bladder by one sounding, or once injecting the bladder. Those who have irritable bladders usually experience some form of irrita tion, after moderate distension with water, and examination with the catheter. It generally assumes the form of rigor, occuring once or more in the twenty-four hours after the examination has been made, and followed by severe pyrexia, that lasts for several days. The rigor of itself indicates the degree of irritation produced by the sound; and if not followed by the hot stage of fever, it indicates nothing more: but the presence of pyrexia is evidence of inflammation taking place; and such a state is most unfavourable to lithotrity. A distinction, there-

fore, is to be drawn between these two states: the occurrence of a rigor need not deter the surgeon from commencing the operation—it often attends the first examination, and may never recur; but the indication of inflammation, drawn from a continued state of pyrexia, should at once induce him to defer the operation, until, by withdrawing all stimuli, he has brought the bladder into a tranquil state. This disposition to inflammation is often kept up by improper food, especially drink; and is indicated by a plethoric condition of the system, and a flushed countenance. Such a condition may be overcome; and is unlike that state of bladder which is the effect of commencing disorganization, and often associated with diseased kidneys. This state of organs is also attended by the same degree of irritability, the same bloody mucous deposit after sounding, and the same accompanying fever: but the constitution presents not the healthy aspect of temporary excitement; there is generally more pallor of countenance, amounting to a pasty state of the skin, with an occasional streak or patch of colour.

A gentleman with symptoms of stone came to town, to place himself under my care, carrying plenty of flesh, but with an appearance of depression strongly characteristic of something more than the irritation caused by the presence of a stone in the bladder, as his symptoms otherwise were not more urgent than the disease often excites in a healthy subject. His urine was much loaded with mucus, which, under exercise, assumed a bloody tint; and the pulse was quick, without any external cause of excitement to make it rise. The bladder refused to receive more than an ounce of water by injection, and that gave him severe pain: this was followed by a slight rigor. From day to day I examined the state of his water, and found it uniformly of a dark colour; the lower third of the utensil was filled with mucus of an unhealthy character; and pyrexia was present, though not of a severe form. No improvement took place in his symptoms, under the plan of medicine and diet that I prescribed for him: and as there was no appearance of his being able to undergo any operation in a short period of time, I advised him to return into the country, and, under the treatment of his medical attendant, to obtain all the relief he could, before the operation was performed. He made no complaint of pain in his loins, except after more than usual exercise, and on the occasion of attending the musical festival in Wesminster Abbey. He became worse after his return home, and in a short time he died. Mr. Jubb, of Halifax, inspected his body; and found the kidneys greatly disorganized, absorption of the tubular structure to a great extent, and the pelvis of each kidney filled with a puriform secretion. In the bladder were found three stones of a considerable size.

One principal source of irritability of the bladder is a morbid condition of the cervix or of the prostate gland. The structure about the neck of the bladder, above all others deserves the especial attention of the lithotritist; as it is here that he will meet with the most difficulties, and will also find the chief source of danger. The extreme susceptibility of this part of the bladder is not unfrequently evinced in severe rigor, and inflammation following the introduction of a sound in patients who complain of dysuria connected with an enlarged prostate gland. These persons, often highly disposed to inflammation, have a severe attack, brought on by the casual introduction of an instrument for the purpose of ascertaining the cause of their ailments. When the morbid condition of the gland is combined with calculus, the risk of inflammation, and the danger of its consequences, become greatly increased; and the hasty performance of lithotrity in persons not prepared for the operation has been known to induce a fatal cystitis. Too much caution cannot be used in ascertaining the exact condition of the neck of the bladder, by occasional examination with the sound, not only with the view of learning the physical state of the gland, but also of measuring the degree of susceptibility. The irritability of the cervix, instead of being increased by the catheter, is often considerably diminished by the careful and occasional introduction of a large instrument, more especially if assisted by regulated diet and alkaline saline medicines; whereas, if the operation be performed without such preparation, on a person enjoying high health, the combined efforts of the sudden distension of the cervix and prostate gland, the reduction of a hard stone into angular masses, that are propelled, at each time of voiding urine, into the prostatic part of the canal, and the natural susceptibility of the bladder, bring on a degree of inflammation that is with difficulty arrested. I shall have occasion hereafter to explain more particularly the danger to which the ma-

nipulation of the percussor exposes the neck of the bladder and prostate gland.

The presence of calculi in the kidney cannot always be ascertained before the operation is performed; nor does this seem to be important. If they are large, their existence is sufficiently indicated by the symptoms they occasion: and if small, they will descend down the ureter, without occasioning more than slight irritation of the system. One of the first patients on whom I operated had frequently been the subject of small phosphatic stones in the kidney; which, under exercise, would cause lumbar pains, and other signs premonitory of their descent into the bladder. On the day after that on which the stone was crushed for the first time, he experienced a severe rigor, with pain in the left loin: these were followed by a continued form of fever that lasted for two days, when he was relieved from the pain in the loin and ureter by a small stone escaping through the urethra, which could be distinguished among the fragments of the large calculus. Any person observing the patient under his attack would have thought him in imminent danger; but his surgeon, Mr. Wotton, who had often attended him in these attacks, knew their cause, and, with confidence, predicted a favourable termination as soon as the calculus entered the bladder. This gentleman had subsequently similar attacks during the sittings required for the complete destruction of his calculus, and rose from them as well as if nothing unusual had occurred. When the presence of a renal calculus is combined with disease of kidney, the case assumes an altered aspect, and one highly unfavourable for the operation.

(To be Continued.)

AN ADDRESS

DELIVERED TO THE MEMBERS OF THE

WORCESTERSHIRE NATURAL HISTORY SOCIETY,

ON THE OPENING OF THE

WORCESTERSHIRE MUSEUM,

SEPTEMBER 15, 1836.

By CHARLES HASTINGS, M.D. F.G.S.

(Concluded from page 273.)

We must not forget that, in all these investigations, Cuvier was greatly assisted by his appointment at the Jardin des Plantes, which placed him in a situation where he was in the midst of those objects to which his life would have been devoted by inclination, and from the day of his appointment to the day of his death his labours were devoted to forming and completing the collections of which it can now boast, and which, when considered with regard to their arrangement as well as extent, may be pronounced unrivalled.

But great as were the labours of Cuvier in zoology, and brilliant as was the success that attended them, they cannot be compared in their results with those which arose from the devotion of his energies to the prosecution of another branch of natural history—geology. It has been well said that, in the hands of this distinguished man, natural history became adorned for the first time with the highest attributes of pure philosophy. To him we owe the most important of the laws which have regulated the distribution of the animal kingdom, and by the application of which we have been made to comprehend many of the mutations on the surface of our planet. He observes, "in my work on fossil remains I proposed to determine to what animals those fragments of bones should be assigned which occupy the superficial strata of the globe. This was an attempt to traverse the whole of a region of which as yet the first approaches were scarcely known. If we are interested in tracing out the nearly effaced vestiges of the early periods of our species, in so many nations utterly extinct, why should we not seek to discover, in the obscurity that envelopes that infancy of the earth, relics of revolutions long anterior to the existence of all nations? We admire that power of the human mind the exercise of which has enabled us to ascertain those motions of the planets which nature seemed for ever to have hid from us. Genius and science have soared beyond the limits of space. Observations developed by reason have detected the mechanism of the world. Would it not be some renown for man, in like manner, to penetrate beyond the limits of time, and to discover by research and reflexion the history of this world, and of a succession of events which preceded the birth of the human race?"

The celebrated work of Cuvier on fossil remains was undoubtedly the first that led to an accurate knowledge of the tertiary strata; indeed, from this work may be said to have proceeded that precision in the investigation of the relics of former worlds, which has placed geology on the

sure foundation of scientific induction. Cuvier, by the application of the rarest powers of observation and reflexion, and by an unequalled ingenuity, converted comparative anatomy into a sort of talisman for unfolding the wonders of the osseous contents, which lay for ages in the caverns of the earth. His researches on the fossil bones, as they now appear in the work before alluded to, form an epoch in the annals of geology, that yields to no part of its history in deep and durable interest; nor has the great author of this important discovery failed to consider it to be a source of wonder, as it was of pride to his own heart. "When," said he, "the sight of some bones of the bear and the elephants, twelve years ago, inspired me with the idea of applying the general laws of comparative anatomy to the reconstruction and the discovery of fossil species; when I began to perceive that these species were not perfectly represented by those of our day which resembled them most, I did not suspect that I was every day treading on a soil filled with remains more extraordinary than any I had yet seen; nor that I was destined to bring to light whole genera of animals unknown to the present world, and buried for incalculable ages at vast depths under the earth."

A highly talented reviewer, in alluding to this part of the labours of Cuvier, remarks that "to any one who indulges his solitary thoughts with the hope of enriching any part of the wide domain of natural history, an object eminently worthy of rational and contemplative beings, he would recommend the diligent perusal of the introductory essay of the great work in which the fossil remains are described; known to the English reader as a discourse on the Revolutions of the Globe. Cuvier is there beheld, if we may so say, advancing to his great task with a full consciousness of its extent, and of the additions which would be made by future inquirers even to his own discoveries; but at the same time with the confidence of one who enters on a region which, although obscure and encumbered, he has carefully prepared himself to explore. He designs from the first to show the relation between the history of fossil bones of terrestrial animals and the theory of the earth; to expose the principles by which the character of these bones was decided; to show how far the species of those animals to which they belonged differed from existing species; to ascertain the influences of time and of climate; and thus to demonstrate that the differences must have been connected with extraordinary events as their causes. On these observations he builds up a new system of the ancient earth, not the offspring of fancy, but the result of philosophical induction, from facts carefully established, and which will bear the test of comparison with all the civil and religious records of man."

It does not always fall to the lot of great men to see the value of their labours and discoveries fully appreciated by the age in which they live; but Cuvier had the happiness to observe a just estimate formed of his exertions by all men of science in every part of the civilized world: we may also observe that he was highly rewarded by three successive rulers of the destinies of France, of which country he was finally made a peer. It has been imputed as a matter of blame, that so powerful a mind as Cuvier's should have so readily accommodated itself to the despotic Emperor, the weak and bigoted Bourbons, and the once liberal government of Louis Philippe. I am not, however, myself disposed to consider this circumstance as showing any want of fixed public principle, which casts a shade upon the memory of this great man, but rather to regard the honours bestowed upon him by a succession of princes, varying in their political views, as the homage paid to exalted genius, and should be proud to record in this enlightened country similar instances of marked distinction being conferred by our government upon the more favoured sons of science.

The grave has now closed upon Cuvier, and his voice is no more heard among men, but he yet speaks through his writings, which will long continue to be regarded as striking specimens of what a devoted zeal for science, when directed by superior intellectual endowments, can effect in the advancement of useful knowledge. In every part of the civilized world the name of Cuvier is revered, and every where disciples of this great man are to be found who are animated by similar zeal; and who, by following up the investigations which he had begun, are continually making fresh additions to the temple of science.

It is not my intention to attempt any detailed account of the many living labourers now employed with devoted energy in the advancement of Natural History. It may be sufficient to observe that at no former period in the history of the human race were so many men of

exalted intellect engaged in this pursuit, and never were their efforts so judiciously combined together as they are at present. We can boast in our own country of possessing great men, as naturalists, whose additions to science are so important as to place them in great estimation among men, and whose continued devotion to this object promises still further rewards to their investigations.

The study of the remains of extinct animals has been more especially pursued with great earnestness by Dr. Buckland, who has thrown much light on the history of the fossil mammalia of the most recent geological period, and whose patient, acute, and philosophical inductions from the bones found in caverns are a singular instance of the triumph of accurate knowledge over difficulties which would have prevented any ordinary mind from making out the conformation of these long extinct races of animals, and from, as it were, localizing these beings, long extinct and unknown, as having been inhabitants of the district where they were found.

The time would fail me to tell of Mantell, who, with the last mentioned writer, has brought, we may almost say, into renewed existence the monstrous Saurians; and who, by assiduous and never-wearying research among the oolities of Stonesfield and the Wealden limestone of Tilgate, has made known to us the Magalosaurus and Iguanadon:—of Sedgwick, whose forcible eloquence and sportive wit, combined with earnest zeal for the truths of revealed religion, has removed objections from timid minds who were disposed to view with suspicion the effects of the study of geology on the yet higher destinies of man:—Of Lyell, whose work on the Tertiary Formations constitutes a new era in geology, as it forces on the consideration of philosophers the necessity of a more careful consideration of the changes that are daily effected upon the surface of our earth by the causes which are in continual operation. The excellence of this production is of so high an order, that the author has been rewarded for these labours by the Council of the Royal Society, who have thought him worthy of receiving one of their royal medals; and whilst they decline to offer any opinion on the controverted positions contained in the principles of geology, they state the following as the grounds of their award:—

1. The comprehensive view the author has taken of his subject, and the philosophical spirit and dignity with which he has treated it.

2. The important service he has rendered to science by especially directing the attention of geologists to effects produced by existing causes.

3. His admirable description of many tertiary deposits, several of these descriptions being drawn from original observations.

Lastly, the new mode of investigating tertiary deposits, which his labours have greatly contributed to introduce, namely, that of determining the relative proportions of extinct and still existing species, with a view to discover the relative ages of distant and unconnected tertiary deposits.

Mr. De la Beche also, to whose pen and pencil Natural History has been for a series of years largely indepted, has lately published a small volume entitled "Researches in Theoretical Geology," the main tendency of which is to establish the importance and practicability of subjecting geological opinions to the tests of chemistry and natural philosophy. The author goes over much ground, keeping always the same direction, having apparently no other object in view than the acquisition and communication of sound knowledge, the detection and exposure of error, and the discovery and establishment of truth. Nor can I omit to mention the important labours of this author in conjunction with Mr. Conybeare. The admirable paper on the genus Plesiosaurus, in the fifth volume of the Geological Transactions, must be familiar to every geologist: and Mr. Conybeare's reconstruction of the fragments of the Plesiosaurus Dolichodeirus is a fine example of the sure grounds on which comparative anatomy enables us to proceed in these investigations, and places the name of this eminent geologist high among the successful followers of Cuvier in these pursuits.

All these, and many other labourers in the wide field of natural history, might detain me, with great propriety, whilst I unfolded to you their respective claims to our notice and regard. In abstaining, however, from any further account of these authors, I bend to the necessity of keeping within certain prescribed bounds this Address; but must at the same time call your attention to the important work of Mr. Murchison, which will soon appear, and which has so direct a reference to the natural history of our own district.

This distinguished and indefatigable geologist has for some years been employed in inquiring into the geological formation of the Upper Transition Rocks, in several counties in Wales, and in those of Salop. Hereford, Monmouth, and Worcester. To these rocks Mr. Murchison has now given the name of Silurian, and he has discovered in them a series of deposits replete with organic remains, which seem to him to afford a complete key to a large portion of the rock formations hitherto much neglected, while he has succeeded in collecting together a great number of organic remains which were previously unknown to naturalists. To these researches, interesting to all, we are more especially called upon to attend, as they relate to our own immediate vicinity, of which surely we should be anxious to collect every possible information.

If I fail to speak of Humboldt, it is because an essay rather than a paragraph should be devoted to set forth the various claims of this striking and enlightened traveller and natural historian upon the age in which he lives. It would be unpardonable in me not to allude to Agassiz, whose researches in fossil ichthyology promise to be rewarded by discoveries second only in importance to those of Cuvier. Among botanists, Brown and Hooker in our own country, and De Candolle in France, must take the highest station for their labours in systematic botany; while the researches of Lindley and Brogniart in the fossil department of that science, bid fair to assume an importance in the elucidation of the mineral strata scarcely inferior to that which attaches to the investigations of the fossil zoologist. I may also remark that none of the late achievements of philosophy seem more astonishing than the labours of Mr. Crosse of Taunton, who, previously wholly unknown, came prominently forward at the late meeting of the British Association at Bristol. His discoveries, in producing beautiful crystallizations and gems through the agency of electricity upon water impregnated with salts of lime, seem to invest the realities of experimental investigation with the magical enchantment of fiction and romance. These, with the results produced by Mr. Fox in artificially, by means of a blacking-pot and a few metals, imitating Nature's mode of forming metallic veins, promise to throw a more brilliant light upon the important operations that are continually in progress in the earth's dark bosom than our most sanguine anticipations could, a few short years ago, have imagined.

I would, then, finally ask you, what can you say to these things? Can you for one instant hesitate to admit that the wide field of natural history offers the most seductive attractions to the labourers in it? and that all institutions established for its cultivation claim your most earnest consideration and demand your best support? Indeed, with regard to our own promising society in the retrospective view of the last three years, we have whereof to glory. It has been said of the higher classes of the community in general in this country, that they are not only, from defects of education, slightly versed in scientific matters, but that they also show an indifference in assisting those who are desirous of becoming acquainted with the laws and structure of the universe they live in; but we glory that philosophy has with us made its way into the higher orders of the community, and that enlightened men of every degree, and sect, and party, have united together to accomplish the laudable objects at which we aim. We glory also that we have a noble patron, whose taste and capacity lead him to cultivate the higher departments of knowledge, and who, consequently, as belonging to the aristocracy of talent, has additional claims to our consideration, to those which he derives from his birth and station. We glory, also, that on the present occasion the sacred alliance which exists between the truths of nature and those of revealed religion, is evinced by the presence and presidency of our respected and venerable diocesan. We glory, likewise, that we have succeeded in engaging the female mind in our pursuits—a circumstance which has called forth from Archdeacon (now Bishop) Butler, in the address from which I have before quoted, the following interesting remarks:—"Natural history presents many charms to the cultivated female mind, considered as an innocent and an elegant pursuit, as combining information with amusement, and occupying without engrossing the mind; engaging it in agreeable study without withdrawing it from domestic duties; it has a thousand claims on female attention, particularly in those branches which relate to botany, entomology, and ornithology. It is therefore to be hoped that the ladies of Shropshire will follow the bright example set them by the neighbouring county of Worcester, in fostering the Society established there."

We glory, finally, that the management of the affairs of our Society has fallen into the hands of zealous and energetic men, who have taken advantage of the favourable influence of popular opinion, and have not only collected together many interesting objects in our museum, but have also been enabled, through the public liberality and munificence, to rear the splendid edifice in which I now utter these feeble and perishable words, and which promises to stand for ages as a memorial of those exertions by which so great a work has been accomplished. But I would yet impress upon you the conviction which I so strongly feel, that these advantages will be found of little avail without renewed exertion; for though the position we occupy is commanding, yet it will require great activity and vigilance to turn it to good account. And if I may venture still further to trespass upon you after having too long occupied your time and attention, I would conclude with expressing a desire, sincere and fervent, that harmony and good feeling may reign among us, that we may be secured from the baneful effects of little enmities and dissensions, and that no rivalry may be known within these walls, excepting that which arises from the animating ambition of attaining the great and noble ends to which this Institution is directed. Guided by these pure and wise councils, we may confidently anticipate that this Society will long, long continue to diffuse science and civilization, and to promote individual enjoyment and happiness, and the general good of the community at large.

Such were the aspiring hopes to which the founders of this Society clung in its nascent state, and as its more vigorous growth realizes these anticipations, they will experience a proud distinction in its onward progress. The two grand principles which true philosophy should instil into our minds are veneration for the Supreme Being and a desire to benefit mankind. It is to these grand objects that all our aspirations and all our desires should tend. It was to the establishment of these principles that the energetic mental powers of the great Reformer of modern philosophy were directed; and I may add, that in proportion as this Institution can succeed in implanting in the public mind this genuine, this Baconian, this Christian philosophy, in the same proportion will it diffuse the light of truth and dispel the clouds of darkness and of error which still hang upon the civilized world. Oh! that we may all thus study the great Book of Nature, for then, indeed, the members of this Society, animated by the same spirit which inspired the immortal Milton, may with him triumphantly exclaim

> How charming is Divine philosophy!
> Not harsh and crabbed as dull fools suppose,
> But musical as is Apollo's lute.
> And a perpetual feast of nectar'd sweets,
> Where no crude surfeit reigns.

The London Medical

AND

Surgical Journal.

Saturday, June 10th, 1837.

THE DUBLIN COLLEGE MONOPOLY.

We have, some short time since, received several communications from friends in Dublin, which want of space prevented our publishing before now: in postponing them we confess we also gratified our own feelings, for it is not without pain, that we should dwell upon, and give to the world the history of corruptions and abuses as they occur in Ireland, that country to which so warmly respond the best and dearest feelings of our heart. Still we have duties to perform, as public journalists, which must be fulfilled, and to which we must sacrifice every other less imperious sentiment. We have the satisfaction, however, of knowing that in performing a duty of this kind, painful though it be, we take the most effective steps to realize that grand and useful object, the establishment of effective medical institutions, founded on just and general principles, free from monopoly and corruption.

We have always dealt out praise, and with no niggard hand, when so doing was consistent with truth, when we had occasion to refer to the Irish College of Sur-

geons collectively, or to individuals influential in that corporation. We cannot then be charged with malevolence against either it or them; our sentiments on this head remain unaltered. This, however, does not nor should not make us blind to the vices, defects, and corruptions of a system, which, in candour, we must confess ought to be exploded, as quite unsuited and inadequate to the wants and requirements of improved modern times. The college in question, too, will find it their interest, to abandon the narrow basis of monopoly and the private gains of a few individuals (who, however respectable, can have no *just* claim to such distinction and pre-eminence), and to establish themselves on a broad and liberal foundation, that will recommend itself by its general utility and justice;—that is, if they wish to maintain their influence, nay, their very being, as an important public institution.

It is impossible to deny the charge brought against the Dublin College of Surgeons, that it is little or nothing else than *a private school*, with the power of granting degrees, placed in a lofty, pre-eminent position, supported at the public expense, to the great detriment of valuable public interests, propped up and supported by the most unjustifiable corruptions and monopoly, the professional appointments to which, not being open to the healthful principle of free public competition, but resting entirely with a very limited number of persons, who swallow up all the emoluments of influence, honour, and money, connected with it, and yield nothing, absolutely nothing, in return even to that limited community, upon which the unnatural and parasitic monster has been grafted.

To any one gifted with a particle of common sense, or in whom common sense has not been blinded by self-interest, it must be evident, that, in these times, when we have on all sides such numbers of private schools, comprehending every excellence, no institution resting its claims upon such an unstable foundation, can hope for, or *merit* to survive the result of investigation and reform legislation;—it must be evident, also, that any system or policy constituted such as that we have just alluded to, must irritate the feelings, and insult the judgment of the excluded majority; and be at once, incompatible with justice and every sound principle, elements which are hourly bearing more and more essential parts of our social system, in all its details.

We are far from underrating the value of education, or of thinking such an important subject not amongst the very fittest to occupy the most serious attention of any of our colleges; we are far too from denying the passed services of the School in the Dublin College, services which were requisite during the total absence of all other opportunity of surgical education, services which we have been foremost to laud and defend; but who will not mourn, to see a royal corporation in the second city in the empire, vested with extensive powers and privileges, producing no other fruit, whatever, than crowns the unaided exertions of any half dozen of medical gentlemen in the empire, who unite together for the praiseworthy object of giving medical instruction in a private school? Who will not admit that such a puny result from such a complicated machine, is beyond doubt a most "lame and impotent conclusion?" Who will not, under such circumstances, be ready to confess there must "be something rotten in the state of *Denmark?*" Who will not acknowledge that here, there is a negative offence, a crime of omission of considerable magnitude, a treason against public interests, that

loudly demands correction and reform? But who will not be ready with the fullest and most hearty condemnation, when he learns that that treason, that negative offence, is maintained by a system of corruption and intrigue, that violates the commonest principles of justice and integrity: the offence is now no longer negative, but a positive crime of the blackest character, to leave which unremedied and unpunished, becomes an absolute neglect of public duty of the first importance, and a disregard of public interests of the most vital character.

Sentiments such as these have been long springing up among the members of the college, and there has long been a growing desire to abate or even annihilate the School, which (through the activity of those having a pecuniary interest in its existence) absorbs every other consideration and interest, and renders completely abortive, every attempt to promote the interests of science or of the surgical profession—in a word, to forward any object of public benefit. If this were a growing evil *within* the council chamber, what must be expected from the entrance to the membership of licentiates of all shades of opinion on medical politics, for, according to charter, every thing is done by a majority of voices in the Dublin College? Calculating thus, the School *proprietors,* for such they are, saw nothing but an early downfal from their (to the public) mischievous pre-eminence and pecuniary gains: they determined to anticipate this melancholy revolution, so mustering all their strength, they got passed a bye-law, which is perfectly illegal, and opposed to the entire spirit of their charter and constitution, to wit, a law making one-third black balls at the ballot for admission to the membership, fatal to the aspirant for that honour; in other words, giving to a minority of one-third, the entire control over the future destinies of the corporation, in order to maintain a gross, and corrupt, and useless job, in which they themselves (the minority) are interested!

Such a law is evidently unjust; it has been pronounced by some of the first lawyers in Ireland perfectly illegal. It affects however the objects and intentions of the framers of it; it places entirely within the hands of the interested and factious school minority, the keys of the entrance portal of the college; no one is suffered to enter save by their permission, save by making terms with them; a power which we regret to be obliged to declare, they have used, and continue to use, without the slightest remorse or qualm of conscience, regardless of the violation of justice and of law, inseparable from such conduct, and of the outrageous stigma thereby attempted to be branded upon a man's most tender point, his reputation: it is painful to be obliged to put on record another of those moral associations.

The close-borough-condition of the Dublin College was now made apparent: there was scarcely an entrance into the membership for some years; it fell greatly in public estimation; in fact, those of the public who thought on the subject at all, were filled with indignation: meantime the school party rested satisfied while they counted the money in their purses. But the Poor Law Reform Bill is brought before Parliament, which threatens to cheapen the value of their licence, by admitting any other licence as qualifications for medical officer to the Irish charities. They must needs face a liberal, a reform government; how can they do so, while they labour under the damning defect of their being a corrupt close borough? This public impression must first be wiped out. They secretly prepare a list of half-a-score of licentiates, including

two of their own officers in the school, the sons of Mr. Colles—and all, the confidential apprentices of the school professors; they all pass the Rubicon of course, because the protegès and creatures of the interested school faction. One gentleman, however, a Mr. Baker, a professor in a private school, noted for its excellence and its reform principles, that of Mr. Ellis, in Peter Street, having got secret information of the intentions of the school faction, has the manliness and the independence to demand his just and undoubted right, by submitting to the ballot at the same time; and what is the result? He is branded as an outcast, unfit to associate with his professional brethren in the management of the College—and the profession! And for what? What breach of professional etiquette has he committed? Of what violation of kind, gentlemanly conduct, or morality, has he been guilty of, that he should be doomed to such extreme penalty? There is not a shadow of any such imputation or disqualification advanced against him: the majority of his professional brethren pronounce in his favour, but a minority of one-third, enter into a hellish conspiracy, because he is supposed to hold opinions different from theirs, but in unison with the majority of his medical brethren, because he is supposed to disapprove of their perverting a public corporation to a mere private school:—but this blow, beyond a doubt, will recoil with tenfold vengeance on the heads of the guilty faction themselves.

Were there no other argument than this, which strikes so wickedly against the first principles of common morality, it would be sufficient of itself to justify the sentiments and wishes of those, who aim at removing the School altogether, and thus making room for something else, which may not only not be injurious to the best interests of science, the College, and the profession, but may be capable of positive public benefit.

THE KING'S HEALTH.

(*From our Windsor Correspondent.*)

Although the public mind has been, to a very considerable degree, tranquilised by a decided amendment having already taken place in His Majesty's health, it could not be expected that an attack of such alarming symptoms could be either yet permanently removed, or that such symptoms would not have been followed by a considerable degree of debility. The undisguised language which all around the King now appear unhesitatingly to make use of, in expressing the dangerous condition in which His Majesty was placed for some days, is of itself a proof of the accuracy of my former statements; and it is no longer attempted to be concealed that there has been, and still, though in a much less degree, continues, anasarca of the upper part of the trunk, as well as of the inferior extremities; and, though the mucous expectoration has greatly diminished, His Majesty is still afflicted with severe dyspnœa on the slightest motion. The great diminution of the anasarcous swelling, has been attributed to the exhibition of SENEKA or SENEGA, a remedy which in the case of the King has most fortunately produced the most beneficial effects, under the watchful eye and judicious guidance of the President of the Royal College of Physicians. Whilst, therefore, a gladdening improvement has taken place in His Majesty's health, and every laudable endeavour made by the King himself, as by the Court, to impress on the public mind the complete re-establishment of His Majesty's health, it is impossible not to view but with the greatest anxiety His Majesty's condition,

as long as any vestige of disease continues, the ailment being of that description which unfortunately, more particularly in the different branches of the Royal Family, is so apt to recur.

Some amusing reports have gone abroad regarding some most absurd and fallacious conclusions, as to the state of the thoracic viscera, which one of the medical attendants had drawn from the use of the stethescope; and had not Sir Henry's acute diagnostic powers rendered the line of practice quite indisputable, in all probability His Majesty's condition would have been very different from what I rejoice to state it now is.

THE ANATOMIST.

MUSCLES.

MUSCLES OF BACK OF LEG.

Superficial Layer.

Gastrocnemius. O. internal head, upper and back part of internal condyle of femur, and oblique ridge above it; *external head,* from above external condyle. I. lower and back part of os calcis.

Plantaris. O. back part of femur above external condyle, and posterior ligament of knee. I. posterior part of os calcis.

Solæus. O. *external head,* from back part of head and superior third of fibula; *internal head,* from middle third of tibia, unites with gastrocnemius to form tendo Achillis. I. lower and back part of os calcis.

Poplitæus. O. depression on outer condyle of femur. I. flat triangular surface, occupying the superior posterior fifth of tibia.

Flexor digitorum perforans. O. posterior flat surface of tibia, from below poplitæus to within three inches of ankle, fascia, and intermuscular septa. I. last phalanges of four lesser toes.

Tibialis posticus. O. posterior internal part of fibula, upper part of tibia, and nearly whole-length of interosseous ligament. I. inferior and internal tuberosity on os naviculare, internal cuneiform and cuboid bones, and second and third metatarsal bones.

Flexor pollicis longus. O. two inferior thirds of fibula. I. last phalanx of great toe.

MUSCLES OF FOOT.

First Layer.

Abductor pollicis. O. lower and inner part of os calcis, internal annular ligament, plantar aponeurosis, and internal intermuscular septum. I. internal sesamoid, and internal side of base of first phalanx of great toe.

Flexor digitorum brevis perforatus. O. inferior and internal part of os calcis, internal annular ligament, plantar aponeurosis, and intermuscular septa. I. second phalanges of four lesser toes.

Abductor minimi digiti. O. outer side of os calcis, ligament extending from os calcis to outer side of fifth metatarsal bone, plantar fascia, external inter-muscular septum, and base of fifth metatarsal bone. I. outer side of base of first phalanx of little toe.

Second Layer.

Musculus accessorius. O. inferior and internal part of os calcis. I. outer part of tendon of flexor digitorum longus.

Lumbricales. O. tendons of flexor digitorum longus. I. internal side of first phalanges of four lesser toes.

Third Layer.

Flexor pollicis brevis. O. lower and anterior part of os calcis and external cuneiform bone. I. sesamoid bones, beneath first phalanx of great toe.

Adductor pollicis. O. calceo-cuboid ligament and base of second and third metatarsal bones. I. external sesamoid bone.

Transversalis pedis. O. anterior extremities of four external metatarsal bones. I. external sesamoid bone of great toe.

Flexor brevis minimi digiti. O. cuboid and fifth metatarsal bones, and sheath of tendon of peronæus longus. I. inner side of base of first phalanx of little toe.

Fourth Layer.

Seven interrossei muscles. Three on sole of foot, and four upon its dorsum.

Inferiores, vel interossei interni.

1st. *adductor medii digiti.* O. inner side of third metatarsal bone. I. base of first phalanx of fourth toe.

2nd. *adductor quarti digiti.* O. inner side of fourth metatarsal bone. I. inner side of first phalanx of third toe.

3rd. *adductor minimi digiti. O.* fifth metatarsal bone. I. inner side of base of first phalanx of little toe.

Superiores, vel interossei externi.

1st. *O.* intersal side of second metatarsal bone and outer side of first. I. inner side of base of first phalanx of second toe.

2nd. *O.* opposite sides of second and third metatarsal bones. I. outer side of first phalanx of second toe.

3rd. *O.* opposite sides of third and fourth metatarsal bones. I. outer side of first phalanx of middle toe.

4th. *O.* opposite sides of fourth and fifth metatarsal bones. I. outer side of first phalanx of fourth toe.

THE MUSCLES OF THE ORBIT.

1. *Levator palpebræ superioris. O.* upper edge of foramen opticum. I. superior border of tarsal cartilage.

2. *Obliquus superior.* O. foramen opticum. I. sclerotic coat between superior and external rectus.

3. *Obliquus inferior. O.* orbital edge of superior maxillary bone. I. sclerotic coat between it and external rectus muscle.

4. *Rectus superior.*

5. *Rectus inferior.*

6. *Rectus internus.*

7. *Rectus internus.*

[All arise round optic foramen, the external rectus being also attached to margin of sphenoidal fissure, and they are inserted about a quarter of an inch behind cornea.]

MUSCLES OF INTERNAL EAR.

Stapedius. O. within pyramid. I. neck of stapes.

Tensor tympani. O. canal in petrous portion of temporal bone, above Eustachian tube. I. short process below neck of malleus.

Laxator tympani. O. spinous process of sphenoid bone and Eustachian tube. I. processes gracilis of malleus.

BRAIN AND ITS MEMBRANES.

Dura Mater.

A firm dense fibrous membrane, adhering by its outer surface to the bones of the cranium, its inner surface being intimately connected with the arachnoid membrane. It defends the brain, acts as an internal periosteum to the bones of the skull, forms the sinuses, and sends envelopes upon the several nerves as they pass through the cranial holes. It sends off the following processes.

Falx Cerebri commences narrow at crista galli, and arches backwards between the lobes of the cerebrum, becoming deeper until it meets the tentorium, with which process it is continuous on either side. Its convex edge corresponds to the median groove of the os frontis, the sagittal edges of the parietal bones and the upper half of the perpendicular ridge of the occipital bone. The great longitudinal sinus is in its upper edge, and the lesser longitudinal sinus in its inferior free concave edge.

Tentorium extends in a horizontal manner above the cerebellum and below the posterior lobes of the cerebrum. Its convex edges contains the lateral sinuses and correspond to the transverse ridges of the occipital bone, the inferior posterior angles of the parietal bones, the superior angles of the petrous portion of the temporal bones, and to the clinoid processes of the sphenoid bone.

Falx cerebelli is attached to the lower half of the perpendicular ridge of the occipital bone, and extends between the lobes of the cerebellum towards the foramen magnum.

Sphenoidal folds are attached to the lesser wings of the sphenoid bone.

SINUSES.

Great longitudinal sinus, of a triangular form, extends along the convex margin of the falx cerebri. It commences by a small vein in the foramen cœcum, and increasing in size as it proceeds backwards pours its blood into the torcular Herophili. Its interior is crossed by small bands called *chordæ Willisii,* and presents the openings of the veins which course upon the upper surface of the cerebral hemispheres, and a number of small whitish granules called *glandulæ Pacchioni mediæ.* Upon the outer surface of the upper wall of the sinus, between it and the cranium, are situated the *glandulæ Pacchioni externæ.*

Inferior longitudinal sinus is very small, runs along the concave edge of the falx cerebri, and terminates in the straight sinus.

Straight sinus passes from the termination of the inferior longitudinal sinus downwards and backwards, receiving the blood of the venæ Galeni and empties itself into the torcular Herophili.

Lateral sinuses, each corresponds to the transverse groove in the occipital bone, the groove in the posterior inferior angle of the parietal bone, the mastoid fossa of the temporal bone, and the

groove in the occipital bone in either side of the foramen magnum; when it passes through the foramen lacerum posterious and terminates in the jugular vein.

Torcular Herophili corresponds to the centre of the crucial spine of the occipital bone, six sinuses communicate with it, viz.: the two lateral, the great longitudinal, the straight and the two occipital.

Cavernous sinuses, each extends from the anterior clinoid process, to the petrous portion of the occipital bone; and upon being cut into presents a cellular appearance. The internal carotid artery the sixth nerve, and branches of the sympathetic nerve are found within each, but separated from the blood by the reflected venous lining membrane. In the outer wall of each run the third and fourth nerves, and the first branch of the fifth; the sinus of either side presents the openings of the ophthalmic vein, of the two petrosal sinuses, and of the circular sinus.

Circular sinus surrounds the pituitary body and is formed of an anterior and posterior transverse vein which extends from one cavernous sinus to the other.

Superior petrosal sinuses, each passes from the cavernous sinus along the upper angle of the petrous portion of the temporal bone, to the lateral sinus.

Inferior petrosal sinuses, each passes from the cavernous sinus downwards and backwards, along the line of contact of the petrosal portion of the temporal bone, and the occipital to the lateral sinus.

Transverse sinus crosses the cuneiform process of the occipital bone, and connects the inferior petrosal sinuses.

Occipital sinuses, two in number, are contained in the falx cerebelli, and open into the torcular Herophili.

TUNICA ARACHNOIDEA.

Belongs to the class of serous membranes, is spread over the surface of the brain without penetrating between its convolutions, and is reflected upon the dura mater, in those situations where the nerves and veins pierce this fibrous membrane; thus, after the manner of all serous membranes, forming a shut sac, and consisting of a parietal and a visceral layer. It also gains access to the interior of the brain by the arachnoid canal, and lines the free surfaces of the ventricles.

PIA MATER.

The vascular covering of the brain lines its entire surface, dipping between its convolutions and sending numerous blood-vessels into its substance, it is intimately connected to the arachnoid membrane by its outer surface, except at the base and sulci of brain; and entering the ventricles by the great transverse fissure at the base of the brain, presents the choroid plexuses and the choroid membrane.

THE BRAIN.

The brain is subdivided into three portions, viz.: the cerebrum, the cerebellum, and the medulla oblongata.

THE CEREBRUM.

This is the largest of the three divisions, is of an oval form and is divided into two equal portions called hemispheris, by a fissure which extends along the median line upon its upper surface, and contains the falx cerebri and the antennæ of the corpus collosum. At the base of the brain the cerebrum is also divided at each extremity by the medium fissure, but in the centre both hemispheres are united.

Hemispheres, right and left, are convex superiorly and externally, and flat towards each other, where they correspond the falx.

Lobes. Each hemisphere is divided into three lobes upon its under surface; the anterior, which is the smallest, rests upon the roof of the orbit and presents a groove for the lodgement of the olfactory nerve; the middle, prominent and convex, lies in the middle fossa, in the base of the cranium; and the posterior rests upon the tentorium.

Fissura Sylvii separates the anterior from the middle lobe, and corresponds to the lesser wing of the sphenoid bone and its fold of dura mater. The cerebral roof of this fissure is pierced by small arteries, branches of the middle cerebral artery.

Convolutions, or gyri, are eminences longitudinal and rounded, but directed in various ways upon the surface of each hemisphere.

Sulci are the fissures which separate the convolutions from each other, over which the arachnoid membrane passes, but into which the pia mater dips.

Cineritious substance of brain is of a yellowish grey colour, from three to four lines in thickness, soft and vascular, and for the most part situated upon the outer surface of the brain. It is however found in striæ and masses in the interior of the brain, and surrounded by the medullary substance. In some situations its colour assumes a dark hue, as is seen when a section of the crus cerebri is made.

Medullary substance, white elastic and fibrous, forms the greater part of the brain.

Centrum ovale minus, an oval mass of medullary substance surrounded by cineritious substance, and rendered apparent by making a section of each hemisphere within a few lines of the corpus callosum.

Centrum ovale magnum, the large oval mass of medullary structure, which is rendered apparent by slicing both hemispheres on a level with the corpus callosum.

Corpus callosum, unites the hemispheres to each other, is about three inches in length and presents upon its upper surface the *raphe,* which corresponds to the anterior cerebral arteries, and from which, on either side, pass the connecting transverse fibres of the hemispheres, called linæ transversæ. It unites by its posterior extremity with the fornix and the hippocampus, major and minor ; its anterior extremity being curved upon itself and continuous with the optic commissure and tuber cinereum at the base of the brain.

Septum Lucidum descends from the raphe of the corpus callosum to the fornix, separating the lateral ventricles from each other. It consists of four layers, two of which are cineritious, and two medullary ; the medullary layers having in general a cavity between them called the fifth ventricle : its form is triangular, the apex corresponding to the union of the corpus callosum and the fornix, the base anterior, corresponding to the curved portion of the corpus callosum.

Lateral ventricles, each consists of a body and three cornua, the body corresponding to the centre of each cerebral hemisphere, the cornua proceeding, one to each lobe. The bodies of the ventricles are separated from each other by the septum lucidum.

Corpora striata, two pear-shaped bodies, their large bulbous extremities being contained in the anterior cornua of the lateral ventricles, their narrow stalk-like extremities being directed backwards into the bodies of the ventricles ; they are cineritious on their surface, but when cut into present alternating striæ of cineritious and medullary matter, and hence their name.

Optic thalami, two large bodies placed behind and between the corpora striata, each presents upon its inferior surface two tubercles, called *corpora gleniculata.* Towards the median line the optic thalami, are flat and united to each other by a soft cineritious structure, called *commissura mollis ;* upon their external surface they are white, but their interior is grey.

Tænia Semicircularis.

Tænia, a narrow medullary band situated in the groove between the optic thalimus and corpus striatum of either side.

Fornix, placed horizontally beneath the septum lucidum and corpus callosum, and composed of medullary structure, arches above the third ventricle, and lies upon the velum interpositum and choroid plexus. It commences by its *two posterior crura,* one of which lies in the inferior cornu of either lateral ventricle ; these unite in the median line and form what is called the *body* of the fornix, which passes forwards and terminates in the *anterior crura* : finally, the *anterior crura* descends to the base of the brain, where they terminate in the corpora mammillaria.

The Lyra, is the appearance presented upon the under surface by some slight lines and depressions which correspond to the vessels of the velum interpositum.

Choroid plexus. The fold of pia mater which lies upon the optic thalamus, and which entered the body of the lateral ventricle by the inferior cornu; the choroid plexus of either side passes forwards and inwards, and both unite in the foramen commune anterius.

Velum interpositum, lying underneath the fornix, unites the choroid plexuses of either side ; it is composed of arachnoid membrane and pia mater,and contains in its centre the venæ Galeni.

Venæ Galeni, contained in the velum interpositum, pass from before backwards and terminate in the straight sinus. These veins return the blood from the choroid plexuses and from the parts within the ventricles.

Pineal gland, a small conical cineritious body containing in general sandy matter. It is placed upon the corpora quadrigemina and is connected with the brain by a small transverse medullary band and two peduncles.

Hippocampus minor, an oval eminence in the posterior cornu of the lateral ventricle ; medullary externally, and cineritious in its interior.

Hippocampus major, a similar eminence to the minor but larger, and placed in the inferior cornu of the lateral ventricle.

Pes hippocampi, the tuberculated appearance which the extremity of the hippocampus major presents.

Tænea hippocampi, another name for the posterior crura of the fornix, which are attached to the hippocampus major of either side by their convex margins, their concave edges being free.

Corpus denticulatum, a cineritious serrated line in the inferior cornu of the lateral ventricle, and which is exposed upon removing the tænia hippocampi, beneath which it lies.

Third ventricle, a deep fissure between the optic thalami, exposed by separating these bodies. It is bounded anteriorly by the descending crura of the fornix and the anterior commissure, posteriorly by the posterior commissure and the tubercula quadrigemina, laterally by the optic thalami: its floor corresponds to the locus perforatus and tuber-cinereum, and it is covered in by the velum interpositum and fornix.

MONOPOLY OF THE DUBLIN COLLEGE OF SURGEONS.

The following *precious* document has just fallen into our hands. It appears to have been drawn up about the time the Medical Education Committee was appointed, but is now again circulated with the view of influencing the government and legislature to maintain the Dublin College of Surgeons in its monopoly with respect to County Infirmaries in Ireland. In next week's number of the Journal we shall call the attention of the profession, throughout Great Britain and Ireland, to this statement. We think the London College of Surgeons can scarcely overlook the imputations on them.

Statement of the Royal College of Surgeons in Ireland, respecting the appointment of Surgeons to County Infirmaries.

By an act passed in the 5th and 6th Geo. 3, it is is enacted, that "no person shall be capable of being elected (as surgeon to a county infirmary) who shall not have served a regular apprenticeship of five years to a surgeon, and have likewise undergone an examination before the surgeon-general, the visiting surgeon, the two assistant surgeons, and the resident surgeon of Stephen's Hospital, and the five senior surgeons of Mercer's Hospital, and shall produce a certificate from said examiners, that he hath served an apprenticeship of five years to a surgeon, and hath undergone a proper examination as aforesaid, and is in all respects qualified to be a surgeon to the said infirmary or hospital."

The enactment of this provision in 1765, twenty years before the incorporation of the Royal College of Surgeons, proves, incontestibly, that it was made solely to secure to the sick poor proper surgical assistance, and to prevent unqualified persons from becoming connected with county infirmaries; and it is to be recollected that there were at this time several practitioners educated in Edinburgh and on the Continent, settled in different parts of Ireland.

By the 36th Geo. 3, it is enacted that "no person shall be capable of being elected surgeon to a county infirmary or hospital, who shall not previously have obtained letters testimonial of his qualification, under the seal of the Royal College of Surgeons in Ireland."

The policy of transferring the duty of examining the infirmary surgeons from the old board to the more responsible body, the College of Surgeons, was obvious; but this was not done for twelve years after the formation of the College in 1784, and, consequently, after the College had given proofs of its efficacy, and that it could be with safety intrusted with so important a duty.

By the 54th Geo. 3, the surgeon of a county infirmary shall lay before the grand jury his letters testimonial, thus confirming the measure of the Irish parliament, after eighteen years of its efficacy.

In 1818, the sense of the Imperial Parliament was again taken on the question, the London College of Surgeons having framed a bill "to regulate the practice of surgery throughout the united kingdom," into which a clause was introduced to remove the barrier raised by the Irish Parliament to protect the poor in the infirmaries, and to cancel the trust reposed in the Irish college. This clause became the subject of debate in the House of Commons, and was successfully resisted, especially by Mr. Peel, who, from information acquired on the spot, was enabled to form a correct opinion on the subject.

It appears, therefore, that during sixty-eight years this matter was four times submitted to discussion; twice in the Irish Parliament, and twice in the Imperial—each successive inquiry and enactment proving the policy and justice of the original provisions.

From the most superficial view of the above enactments, it is obvious that they

were not made for the purpose of aggrandising the College of Surgeons, or of extending to it any undue patronage or monopoly.

That the laws above recited have had the most salutary effect as regards the county infirmaries. no one practically acquainted with their operation can for a moment deny. But this is not the only advantage resulting from their enactment. The selection and adoption of the diploma of the Royal College of Surgeons, Ireland, by the legislature, as the best test of the fitness of the surgeon to discharge the important duties of medical superintendant of an infirmary co-operating with the strict system of education and rigid examinations enjoined by the college, has had the effect of raising this Irish institution to the highest place in public estimation. These two great advantages the legislature is called on to sacrifice. in order to enable every holder of a surgical degree in Ireland, to participate in the professional distinction and emoluments derived from the county infirmaries, however low that diploma may be held in public estimation, or however easily obtained.

If any surgeon in Ireland wishes to qualify himself for the appointment of county infirmaries, he can do so in one week, by producing evidence that he has been for six years engaged in the study and practice of his profession, and by passing a public examination—men advanced in years, and enjoying extensive practice, have done so.

If the legislature considered it necessary, in 1765, 1796, and 1814, to institute a strict scrutiny into the qualifications of candidates for the appointment of surgeons to county infirmaries, it is surely still more necessary, at the present moment, when so many are practising surgery in Ireland under the authority of diplomas granted by colleges totally ignorant of the wants of Ireland in this particular, and little interested in the welfare of the country generally.

It has been argued that the infirmaries would be served by affording the governors an opportunity of selecting surgeons from the largest possible numbers; but when it is known that there are 386 graduates of the Irish college, from which a selection may be made, this argument has little weight.

There is one topic which cannot be left untouched in this discussion, however displeasing it may be to those affected by it, and however repugnant to national pride or prejudices; it is the question, whether diplomas in surgery, granted by the colleges of other countries, and especially by the College of Surgeons in London, should be considered as genuine and valuable tests of qualification as that of the Irish college.

It is to be presumed that the London College, acquainted with the practice of the profession in England, as regards education, have judiciously and effectually modelled and adopted their sytem to that practice; but unacquainted with the wants of the people, the practices of the profession, and the state of society in Ireland, they have totally failed in their attempts to supply the necessities of this country in that particular. The fact cannot be concealed, that the inadequate exercises, the short period of practical study, and the brief examination upon which the London College have granted diplomas to Irish students, has been attended with the most mischievous consequences to Ireland.

The efforts of the Irish College to *enforce* a proper system of surgical education in Ireland, pursuant to the provisions of their charter, have been greatly weakened by the opportunities afforded to students to obtain diplomas on easier terms elsewhere. The best friends of Ireland should therefore, in place of diminishing the influence of the Irish College of Surgeons, strengthen their hands by additional powers, and oppose every obstacle to the interference of other colleges with surgical education in this country.

If the London College claim a right to intermeddle in the regulation of surgical education in Ireland, by virtue of their charter, such claim must be firmly resisted. No such object was ever thought of for one moment, or contemplated in their incorporation.

It has been urged that all the hospitals of England are open to Irish surgeons, and that, therefore, this privilege should be reciprocal. This objection to the laws recited above, would be more specious than just. There is no special legislative provision which renders the members of the Irish College ineligible to English hospitals; but as the local or domestic regulations or practice of these institutions restricts the situation to those who have served apprenticeships in them, the Irish surgeons are virtually excluded.

Until the legislature shall be induced to consider the subject of medical and surgical education an object of national importance, and to compel the different

colleges to adopt an equally rigid, protracted, and laborious system of education, this question of reciprocity cannot be entertained. To compel, by any indirect laws, the Irish College to lower the standard of its system of education to that of any other college, would be too flagrant an act of injustice.

MEDICAL CHARITIES. (IRELAND.)

A BILL FOR THE BETTER REGULATION OF HOSPITALS, DISPENSARIES, AND OTHER MEDICAL CHARITIES IN IRELAND.

PREPARED AND BROUGHT IN BY LORD MORPETH, MR. ATTORNEY GENERAL FOR IRELAND, MR. FITZSTEPHEN FRENCH, AND MR. WILLIAM O'BRIAN.

WHEREAS it is expedient to make provision for the better regulation of the several hospitals, dispensaries, asylums, and other medical charities now existing, or which may hereafter be required in Ireland; Be it therefore enacted, by the King's most excellent Majesty, by and with the advice and consent of the Lords spiritual and temporal, and Commons, in this present Parliament assembled, and by the authority of the same, That from and after the first day of October, one thousand eight hundred and thirty-seven, the parts of the several Acts hereinafter mentioned shall cease, determine and be repealed; that is to say, so so much of an Act passed in the Parliament of Ireland in the fifth and sixth years of the reign of King George the Third, intituled, "An Act for erecting and establishing Public Infirmaries or Hospitals in this Kingdom," as relates to the qualification of surgeons to be elected for such infirmary or hospital, and to the presenting of money by the grand juries for support of same; and so much of an Act passed in the Parliament of Ireland in the seventh and eighth years of the reign of King George the Third, intituled, "An Act to amend an Act made in the last Session of Parliament for the erecting and establishing Public Infirmaries or Hospitals in this Kingdom," as relates to the qualification of Physicians to be elected to County Infirmaries in Ireland; and so much of an Act passed in the Parliament of Ireland in the thirty-sixth year of the reign of King George the Third, intituled, "An Act for the further Regulation of Public Infirmaries or Hospitals," as relates to the qualification of surgeons, to be elected to county infirmaries in Ireland; and so much of an Act passed in the forty-fifth year of the reign of King George the Third, intituled, "An Act to amend and render more effectual an Act made in the Parliament of Ireland in the fifth year of his present Majesty, intituled, 'An Act for erecting and establishing Public Infirmaries or Hospitals in this Kingdom," and of an Act passed in the forty-seventh year of the reign of King George the Third, intituled, "An Act to amend an Act made in the last Session of Parliament, for regulating and providing for the Relief of the Poor, and the Management of Infirmaries and Hospitals in Ireland," and of an act passed in the forty-seventh year of the reign of King George the Third, intituled, "An Act to amend an Act made in the Parliament of Ireland in the fifth year of his present Majesty's reign, for erecting and establishing Public Infirmaries or Hospitals in Ireland," as relates to the presentment of money by grand juries for infirmaries or hospitals; and of so much of an Act passed in the fifty-fourth year of the reign of King George the Third, intituled, "An Act to amend several Acts for erecting or establishing Public Infirmaries or Hospitals in Ireland," as relates to the qualifications of surgeons elected for county infirmaries or hospitals in Ireland; and so much of an Act passed in the fifty-eighth year of the reign of King George the Third, intituled, "An Act to establish Fever Hospitals, and to make other Regulations for Relief of the suffering Poor, and for preventing the increase of infectious Fevers in Ireland;" and of an Act passed in the third year of the reign of King George the Fourth, intituled, "An Act to amend an Act passed in the fifty-eighth year of the reign of his late Majesty King George the Third, for establishing Fever Hospitals, and for making other Regulations for Relief of the suffering Poor, and for preventing the increase of infectious Fevers in Ireland;" and of an Act passed in the third and fourth years of King William the Fourth, intituled, "An Act to amend the Laws relating to Grand Juries in Ireland;" and of an Act passed in the third and fourth years of King William the Fourth, intituled, "An Act to explain and amend the Provisions of certain Acts for the erecting and establishing Public Infirmaries, Hospitals and Dispensaries in Ireland," as relates to the

presentment of money by grand juries for hospitals and dispensaries in Ireland; and so much of an act passed in the first and second years of the reign of King George the Fourth, intituled, "An Act to make more effectual Provision for the Establishment of Asylums for the Lunatic Poor, and for the custody of Insane Persons charged with Offences in Ireland;" and of an Act passed in the sixth year of the reign of King George the Fourth, intituled "An Act to amend an Act of the first and second years of his present Majesty, for the Establishment of Asylums for the Lunatic Poor in Ireland;" and of an Act passed in the seventh year of the reign of King George the Fourth, intituled, "An Act for the further Amendment of an Act of the first and second years of his present Majesty, for the Establishment of Asylums for the Lunatic Poor in Ireland;" and of an Act passed in the sixth and seventh years of the reign of his present Majesty, intituled, "An Act to consolidate and amend the Laws relating to the Presentment of Public Money by Grand Juries in Ireland," as relates to the repayment of advances of money from the consolidated fund to be made to lunatic asylums in Ireland after the first day of October one thousand eight hundred and thirty-seven.

And be it enacted, That it shall and may be lawful to and for the lord lieutenant or other chief governor or governors for Ireland for the time being to nominate and appoint four fit and proper persons, being physicians or surgeons duly qualified by the provisions of this Act, to be inspectors of hospitals, infirmaries, asylums, dispensaries, and other medical institutions in Ireland, removable at the will and pleasure of the lord lieutenant, or other chief governor or governors of Ireland for the time being; and such four persons shall perform all the duties prescribed for the medical inspectors as directed by this Act.

And be it enacted, That each of the said inspectors shall receive such salary as the lord lieutenant or other chief governor or governors of Ireland shall appoint, not exceeding to each the sum of hundred pounds in the year, together with such allowance for travelling expenses as the said lord lieutenant or other chief governor or governors shall appoint; which salary and allowance shall be payable in quarterly payments out of the consolidated fund of the United Kingdom of Great Britain and Ireland.

And be it enacted, That such inspectors shall not themselves be attached to or in anywise connected with any hospital, infirmary, asylum, dispensary, school of surgery, pharmacy, or other medical institution whatever, or derive any pecuniary emolument from private practice as a physician or surgeon, or from the performance of any duty imposed upon them by this Act, other than the salary and allowance hereinbefore provided.

And be it enacted, That the said inspectors may meet and sit from time to time, in such place or places as they shall find most convenient, with or without adjournment, and shall have an office in the city of Dublin, to be called "The Medical Charity Office;" and that all acts, matters, and things which the said inspectors are by this Act authorized to do or execute, may be done and executed by any two or more of them; and that they shall and may, with the consent and approbation of the lord lieutenant or other chief governor or governors, employ such clerks and officers as they may find necessary; and that all and every the persons so employed in any such capacity may from time to time be dismissed at the pleasure of the said inspectors, and any other person or persons, with the like consent and approbation, appointed in his or their stead, and shall make such general regulations respecting the medical care of patients deriving medical aid from infirmaries, fever hospitals, asylums, dispensaries, and other medical institutions in Ireland, and such other rules and regulations for the general management of such institutions as they shall think proper, and shall have power from time to time to alter such regulations.

And be it enacted, That from and after the passing of this Act, the said inspectors shall be inspectors of all district lunatic asylums supported by presentments in Ireland, established under any Acts now in force; and such inspectors shall have all the same powers relating to the inspection of such lunatic asylums as by any Acts now in force relating to such lunatic asylums are given to the inspectors general of prisons, who shall cease to have any authority to inspect or visit said lunatic asylums.

And be it enacted, That every hospital, asylum, dispensary, and other medical charity in Ireland, shall be visited twice at the least in every year by one or more of the said inspectors, who shall report upon the state of every such institution to the Medical Charity Office in Dublin.

And be it enacted, That the poor law

commissioners for the time being, acting in the execution of an Act of the present session of Parliament, intituled, "An Act for the more effectual Relief of the Poor in Ireland," shall hereafter exercise a general superintendence over all infirmaries, hospitals, dispensaries, asylums, and other medical charities throughout Ireland, and over the said medical inspectors appointed under the provisions of this Act.

And be it enacted, That before the twentieth day of January, one thousand eight hundred and thirty-eight, and so in every succeeding year before the twentieth day of January in each year, the governors, directors, or committees of the several hospitals, infirmaries, asylums, dispensaries, and other medical charities in Ireland, or the treasurer or other proper officer of every such institution respectively, shall yearly and every year make out and deliver or transmit to the Medical Charity Office in Dublin, a return containing a statement and accounts of all the funds intrusted to the governors, directors, or committees of every such institution respectively, for the benefit of every such institution, and of the application of such funds for the year ending on the thirty-first day of December preceding such twentieth day of January, with the balances of the debts and credits, and of the whole funds of every such institution respectively, on such thirty-first day of December; and also the number of patients or persons received into and sent out of every such institution respectively during such preceding year, and the number of persons who have received advice or medical aid therein during such year, and the number of patients remaining therein at the time of such return, and the number and names of the physicians, surgeons, officers, servants, and other persons employed in or about the management of every such institution respectively, together with an estimate of the amount which will probably be required for the maintenance throughout the year of such institutions respectively, in which estimate shall be stated in detail all expenses that will probably be incurred, whether for buildings, repairs, provisions, medicines, salaries, or other expenses incidental to such institutions, and shall transmit such estimate to the said Medical Charity Office, with all such other matters and things relating to the management, revenue, and expenditure of every such asylum respectively, as shall from time to time be required by the said medical inspectors for the full disclosure of the state of every such institution respectively; and all the said returns, statements, and accounts shall be signed by the secretary, treasurer, or chief officer for the time being of every such institution respectively, and shall be confirmed as just and true statements by the signature of three governors, directors, or committee of every such institution respectively.

And be it enacted, That a half-yearly return of the state of disease in each district, and of the number of patients to whom medical aid has been administered in each of the Institutions aforesaid, shall be transmitted to the said Medical Charity Office, by the medical attendants attached to each such institution; and a general abstract and summary of such returns, together with a general abstract and summary of the expenditure upon each class of the medical institutions aforesaid shall be laid before Parliament in each year during its sitting.

And be it enacted, That the medical inspectors shall have and they are hereby authorized and empowered to use and exercise all such powers for the obtaining of the accounts, statements and returns by this Act required to be made, relating to the said institutions, and in the exercising and stating of the accounts of the receipt and expenditure, and of the debts and credits of every such institution respectively as are given to or vested in the commissioners of accounts under and by virtue of an Act made in the fifty-second year of the reign of his late Majesty George the Third, intituled, "An Act to provide for the speedy and regular examination and audit of the public accounts of Ireland," with respect to the matters and things required to be done by the said commissioners of accounts under the said Act; and all and every persons and person shall be subject and liable to such pains and penalties for any disobedience to any orders of the said inspectors in the execution of this act as are inflicted or imposed by the said recited Act on persons disobeying the orders of the said commissioners under the said recited Act.

And be it enacted, That from and after the passing of this Act it shall and may be lawful for the Lord High Treasurer or the commissioners of His Majesty's Treasury of the United Kingdom of Great Britain and Ireland, from time to time to order and direct that any sum or sums of money shall be advanced and issued and paid out of the growing produce of the said consolidated fund to such person or persons as shall be named in

any such order, or into the Bank of Ireland in the name or names of any such person or persons, to be from time to time paid and applied, under the direction of the medical inspectors, for the purpose of carrying on, maintaining and supporting any such institution from time to time in any district in Ireland, to such amount and at such times, and in such manner and proportions, and upon such estimates, and under such rules, regulations, terms, and conditions, and with such penalties for breach of such rules, regulations, terms and conditions, as to the Lord Lieutenant or other chief governor or governors of Ireland shall seem best suited for promoting the beneficial purposes of any such institution according to the provisions of this Act.

And be it enacted, That the elections of all physicians or surgeons to any hospital, infirmay, asylum, dispensary or other medical institution in Ireland, shall be from amongst the members or licentiates of one of the royal colleges of physicians or surgeons, or chartered universities in Great Britian and Ireland.

And be it enacted, That it shall and may be lawful to and for the medical inspectors, by and with the consent and approbation of the Lord Lieutenant or other chief governor or governors of Ireland, wherever the public convenience may require such a proceeding, to alter the hospital or dispensary districts now existing, and to make new districts either by uniting together, dividing or otherwise altering the present districts, or in such other manner as the said inspectors shall think proper.

(*To be continued.*)

SCHOOL FOR MEDICAL EDUCATION AT MADRAS.

We have been informed that this school is to be distinguished from that at Calcutta, which alone is to be designated a College. This we think impolitic for two reasons; first, that the term college and title of principal or professor entail no expense on the government, while they command great importance with the generality of mankind, who look generally more to the names of things than even to their intrinsic value; secondly, this distinction would infer that the sources of information and means of instruction are to be inferior at the sister presidency to those afforded at the city of palaces; which ought not to be the case. We hear that the students at Madras are equally forward with those at Calcutta, and consequently the latter should not be more favoured than the former. We are glad to hear that the foundation of a Medical College is in contemplation at Ceylon. What are our brethren about at Bombay and in the north western provinces?

THE MILITARY FUND.

Several questions of importance have recently been discussed by the Directors as regards the pecuniary condition of this fund, the result of which has been that they have very properly resolved on sending instruction to the committee now sitting in London to submit the fund to three competent actuaries, in order to arrange it on equitable and permanent principles. We are confident this information will secure general approbation.

WANT OF MEANS PREVENTS MANY FROM SUBSCRIBING TO THE MEDICAL FUND,

Is a fact just brought to our notice: we were ourselves fully aware of this as will be seen by our articles on the condition of the medical service; but it has come so prominently before us that it is our intention to propose that the term one year now allowed to pay up arrears should extend to two years; and we have no doubt the committee will accede to the proposition.

IS THE BOON DESIRABLE WITHOUT THE FUND?

Far different is the case if we may compare the question with that now agitated by the army, viz. that the officers cannot avail themselves of the boon unless the permission to purchase one is conceded. The principle of purchase and that of the fund are the same, and the question is indisputable that the seniors will not retire without some tempting inducement to do so.

Indian Medical Journal, No. 9.

NOTICE TO CORRESPONDENT.

J. T. S.—The elastic corsets of Shoolbred and Renwick will be found highly useful in the case mentioned. They are far superior to all other articles of the kind.

All communications and works for review to be forwarded, (carriage paid) to Dr. Ryan, 4, Charlotte-street, Bloomsbury-square.

THE

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXVII.

ETIOLOGY.

Proximate Causes of Disease—Organic Causes.—Inflammation and Fever—Morbid Depositions—Gangrene—Displacement of Organs—Intus-susception, Herniæ, Prolapsus, Extra-uterine Conception, Miscarriage, Fractures, and Dislocations—Functional Causes—Increased, Irregular, and Diminished Action—Spasms, Convulsions, and Palsy—Nature of Inflammation—Opinions of the French—Wilson Philip on Fever—Ancient Theory of Spontaneous Flux of the Fluids—Stahl, Hoffman, and Cullen, on Spasm of the Capillaries—Hunter on Elasticity of the Arteries—Bellengeri's new Doctrine—Boerhaave on Lentor and Error Loci—Experiments of Hastings and Thomson—Broussais on Subacute and common Inflammation—Views of Jenner and Adams—Armstrong, on the stages of Fever—Idiopathic and Local Fever—Beddoes, Abernethy, and Broussais, on Gastro-Enteritis—Marcus and Clutterbuck, on Brain Fever—Liver and Spleen Fevers—Currie and Mills—Debility in Fever—Statement of the modern improved notions of Fever—Improved Treatment of Fever, by Jackson, Sutton, Bateman, Pritchard, Percival, Duncan, Graham, Welsh, and others—Inflammatory Diathesis—Phlegmonous, Erythematic, Rheumatic, Scrofulous, and Scirrhous Inflammation—Difference between Inflammatory and Spasmodic Pain—Resolution—Critical Fluxes—Intermittent Inflammations—Morbid Deposition of Tissues—Indurations, Hypertrophies, Strictures, Polypi, Teeth, Hair, and Fat—Adhesions and Ossifications—Hydatids—Worms—Rudolphi's Classification—Tubercles—Miliary, Crude, and Mature Tubercles—Opinions of Galen, Loyd, Portal, Baillie, Heberden, and Baron—Encephaloid tumours—Three kinds of Cancer—Pott on Fungus Hæmatodes—Melanosis—Cause of the Black Colour—Opinions of Cullen and Carsewell—Scirrhus—Its membranous Crura—Open Cancer, or Carcinoma—Carmichael, on the Independent Vitality of Cancer.

III. *Proximate Causes.*—These consist of alterations in either the structure or functions of parts, and are therefore divided into organic and functional. The organic proximate causes may be divided into four classes:—1. Inflammation and Fever; 2. Depositions; 3. Gangrene; 4. Displacements. Depositions are of four kinds:—1. Natural Tissues in excess; 2. Preternatural Tissues; 3. Natural Fluids in excess; 4. Preternatural Fluids. The displacement of organs includes:—1. Intus-susception; 2. Herniæ; 3. Prolapsus; 4. Extra-uterine conceptions; 5. Miscarriages; 6. Fractures; 7. Dislocations. The Functional Proximate Causes may be divided into three classes:—1. Spasms, and other examples of increased action; 2. Convulsions and other examples of irregular action; 3. Palsies, and other examples of diminished action.

1. *Inflammation and Fever.*—Inflammation consists in diminished action of the capillary blood-vessels; in consequence of which the blood which accumulates in them is not propelled onwards. The French say it consists in diminished action; but they look only at the first stage of inflammation, which precedes the collapse, and before the "rubor, tumor, calor, and dolor" are present. We make the cold stage of fever part of the disease, but not the cold stage of inflammation,

which they do; and hence they are more consistent than we. Increased secretion is the third stage, both of fever and inflammation.

I think Wilson Philip is right in considering fever a diffused inflammation of the surface. The old writers thought that inflammation was a spontaneous flux of the four fluids we have already mentioned,—blood, yellow bile, black bile, and mucus. Hall said it was a spasm of the capillaries, which tended to keep them full; but Hoffman and Cullen thought the spasm tended to empty them, and to fill the large vessels. The arteries of an inflamed part, however, are as full as the veins; whereas, according to this doctrine, they ought to be empty. Hunter said there was an increased elasticity of the arteries in inflammation, tending to dilate and not to contract them. Bellengeri introduced the new doctrine, that inflammation is the result of diminished action following increased action. Boerhaave thought there was a preternatural lenter of the blood (spissitudo), combined with an error loci. Hastings and Wilson Philip applied stimuli to the web of a frog's foot. It was first blanched, from the constriction of the blood-vessels; and then the vessels became expanded, and the circulation retarded. Thomson says that the circulation in inflamed parts, is sometimes quicker and at other times slower. The quantity of blood which is transmitted, probably remains unaltered, although its celerity is lessened from the expansion of the vessels.

Broussais says that subacute inflammation is seated in the capillary veins, and the origins of the lymphatics. Tubercles and morbid growths, he thinks belong to this variety of inflammation. Common inflammation he looks upon as seated in the capillaries which carry red blood (the arteries). This view is adopted by Jenner, Adams. and Baron. The proximate cause of inflammation and fever may be either organic or functional; but the change being molecular, may not be detected after death.

The stages of fever are three. 1. Constriction; 2. Relaxation; 3. Reaction. Armstrong likewise makes three, but differently named,—1. Oppression; 2. Excitement; 3. Collapse. This arrangement, however, refers to the system generally; whereas the former relates to the skin. It is said by many, that there are no idiopathic fevers, fever being always a local disease, and the skin being inflamed by sympathy. Broussais says that local disease is always gastro-enteritis; and that even in pneumonia the inflammation of the lungs causes gastro-enteritis, and the latter fever; so that the gastro-enteritis is a sort of half-way house. This view originated with Beddoes and Hunter, and was followed by Abernethy. Marcus and Clutterbuck point to the brain, as invariably the seat of the local affection in fever; others, as Currie, to the liver; and others to the spleen. Mills says it is the weakest organ, whichever that may be; and this is probably the true state of the case. Cullen said that, in fever, there was at first debility, and then the vis medicatrix naturæ excited a spasm of the capillaries to throw more blood on the heart, and to excite it to action. The modern improved notions are as follows:—1. All fevers are from excitement. 2. The causes of fever act differently in different cases, so that there is no idiopathic fever. 3. In all fevers bleeding may be resorted to in the first stage, for by diminishing excitement the subsequent collapse will be lessened. There cannot, therefore, be any essential debility in the first stage. Since 1816 the treatment of fever has been very much improved by the writings of Jackson, Sutton, Armstrong, Bateman, Pritchard, Percival, Duncan, Graham, Welsh, and others.

Inflammation is of five kinds. 1. Phlegmonous; 2. Erythematic; 3. Rheumatic; 4. Scrofulous; 5. Scirrhous. The two latter occur only in morbid structures; so that the healthy body is liable only to the three first. The erythematic occurs only in the skin, the mucous membranes, and the internal coat of the veins; the rheumatic occurs in fibrous and muscular parts; and all the rest are liable to the phlegmonous. Scrofulous inflammation takes place in melanosis, encephaloid humours, and phthisis; but not in healthy tissues. Scirrhous inflammation is not that by which scirrhous matter is deposited (which was probably from healthy inflammation), but it is that inflammation which takes place in consequence of some injury done to the scirrhus so deposited. The morbid depositions of inflammation differ according to temperament, and this tendency to a particular kind of inflammation is called a diathesis.

The following are the characters of the different kinds of inflammation:—1. Erythematic. Irregularly diffused; disappears on pressure; has no pointing; is attended by a burning pain; goes on to desquamation or bullæ. 2. Rheumatic.

Not attended by redness, and not by much heat; pain chiefly on motion; frequent metastasis. 3. Phlegmonous pain; pulsation and suppuration. 4. Scrofulous, or strumous. Of a pinkish colour; attended by little or no heat; pain slight; suppuration not healthy; presenting a thin humour with flocculi; the discharge afterwards becoming viscid and albuminons. 5. Scirrhous. Of a purple or lead colour; hard and knotted with rugæ; not much heat; pain lancinating and not increased by pressure; produces suppuration,—open carcinoma. The discharge is a yellow sanies; corrosive, and of a very bad odour.

Inflammatory is distinguished from spasmodic pain, by the different effect of pressure. Spasmodic pain is from the contracted muscles pressing on the nerves; and pressure, by preventing muscular contraction, relieves the pain. In the first place you substitute a general pressure for an interstitial one; in the other you add to the interstitial pressure.

Inflammation may terminate either in resolution, increased deposition, or gangrene. Resolution is often attended by critical fluxes, of which the five following are the principal:—1. Prespiration; 2. Nasal Mucus; 3. Diarrhœa; 4. Hæmorrhage; 5. Urine. Inflammation is diminished action, or irritation in the vessels; recovery is increased irritation, which becomes, by sympathy, a stimulus to other parts, which parts become first irritated, and then collapsed. If this secondary collapse continues, it becomes a metastasis; but if quickly followed by irritation and secretion, a flux is established; so that the latter is not the cause, but the effect of the information terminating. Inflammations have a tendency to be intermittent, as is seen in gout, ophthalmia, erysipelas, odontalgia, and cynanche tonsillaris. It used to be said that only nervous diseases are intermittent; but all diseases are nervous.

2. *Depositions of Natural Tissues in excess.*—Increased deposition is probably from increased secretion of coagulable lymph, and not from effusion, even in hæmorrhage and dropsy. Coagulable lymph has probably within itself the materials of its own organization; thus resembling a seed. This is a more prevalent opinion than that the vessels are acquired from the surrounding parts.

The deposited matters are of various kinds:—1. Induration is an increase of density in a part, without an increase of space. 2. Hypertrophy is an increase of space, without an increase of density. It may be either concentric or excentric. 3. Stricture is a new growth, from coagulable lymph, either on the smooth side of a mucous membrane, or in the cellular tissue on the rough side. Bridle or ring strictures are produced in the former way, and occur in all the mucous membranes. 4. Polypi occur only in parts liable to erythematic inflammation; the skin, mucous membranes, and nervous tissue. A true polypus is covered with mucous membrane; has a peduncle; is never laminated; and has evident vessels, especially at the peduncle. A false polypus is the contrary of all this. An aneurism is the best example of the latter. 5. Teeth are found generally in conjunction with hair and fat, in the ovaries, testicles, uterus, bladder, and sometimes the stomach. They correspond with the teeth in the jaws of those animals in which they are found; nor can the formation of the teeth in the jaws be explained any more than that of teeth elsewhere. Bremser says they are transmuted hydatids.

Serous membranes, when inflamed, pour out their secretion in increased quantity, and form adhesions by cords which become organized; for they are the first to be attacked in sul sequent inflammations, as is seen in pleuritis. Indeed, it is a general rule in the animal economy, that the parts last formed are first attacked. The wisdom-teeth, for instance, are first lost. Hence Sherwin says, that one way to get rid of polypus of the heart, is to give the patient scurvy.

Ossifications occur in all parts of the body, coagulable lymph being first deposited. Morbid ossifications are not true bone, not being organized. They are only calculi.

3. *Depositions of Preternatural Tissues.*—These include hydatids, worms, tubercles, encephaloid tumours, melanoses, scirrhi, and culculi of various kinds.

(1.) *Hydatids.*—Hydatids and tubercles probably result from different degrees of the same inflammation. The presence of hydatids may excite an inflammation leading to the deposit of tuberculous matter. Bremser says that although hydatids may become degenerated or transmuted into teeth, tubercles cannot: for the latter, he says are organized, and one form of organism cannot be changed into another.

(2.) *Worms.*—These and hydatids are the simplest forms of the deposition of preternatural tissues. They are divided into four families, each of which is again

subdivided, so as to make twelves different kinds in the whole :—

Cystica (proper Hydatids).
Cysticercus Cellulosus.
Echinococcus Humanus.
Næmatoidea (Cylindrical Worms).
Hamularia Subcompressa.
Ascaris Lumbricoides.
Trichocephalus Dispar.
Oxyuris Vermicularis.
Strongylus Gigas.
Filaria Medinensis.
Træmatoda (Intermediate Worms).
Dystoma Hepaticum.
Polystoma Pinguicula.
Cestoidea (Tape Worms).
Bothriocephalus Latus.
Tænia Solium.

In this enumeration we have followed Rudolphi's nomenclature. We shall say a few words of each in turn :—1. Cysticercus, or bladder-tailed hydatid. This, which is not common, sometimes occurs in the choroid plexus and the muscles. 2. Echinoccus humanus, a name applied by Rudolphi to the acephalocysts, which are found everywhere throughout the body, except in the intestinal canal. 3. The Hamularia subcompressa is found in the bronchial glands. 4. The Ascaris lumbricoides, or the lumbricus as it is sometimes called, is a long round worm, which inhabits the stomach and small intestines. It differs from the garden-worm (Lumbricus terrestris) in being of a pinkish colour, without hairs on its body, having at the mouth three vesicles, which are probably suckers, and a tapering tail, with the anus situated at some distance from its extremity. The garden, or common earth worm, has but one vesicle at the mouth, is of a brown colour, is furnished with hairs, and has a flat tail, with the anus at its extremity. 5. Trichocephalus dispar, or trichuris vulgaris, a long thread worm. This is the most common of all the worms, and infests the caput cœcum coli. 6. The Oxyuris vermicularis, or ascaris vermicularis, occurs in the rectum. 7. The Strongylus Gigas is the only animal found in the urinary passages. Many others come from them, but they are introduced ab extra. 8. The Filaria medinensis, dracunculus, vermiculus capillaris, guinea worm, or hair-worm, has its locality in muscular parts. It is very long and slender. 9. The Dystoma hepaticum (fasciola hepatica, or fluke) is found in the gall-ducts. 10. The Polystoma (from πολυς and δομα) is so called from the numerous mouths with which it is furnished—it has six at one end and one at the other. Its specific name is pinguicula, because it was found embedded in fat, in an ovarian tumour. 11. The Bothriocephalns latus, or tænia osculis superficialibus, is the *broad* tape-worm, and it inhabits the large intestines. 12. The Tænia solium, or tænia osculis Marginalibus, is the *long* tape-worm. It is found, like the last, in the large intestines.

Linnæus thought the cyst which surrounds false structures in the body, was a living animal, and gave it the name of acephalocystis. Linnæus thought that worms were introduced into the body in the form of ova; and that the differences between them and worms formed out of the body were caused by the peculiarity of their habitat. But we find nothing resembling them out of the body; their differences are such as their habitat could not occasion; they will not live out of the body; they ought, if introduced ab extra, to be found only in the intestinal canal, yet they exist in the fœtus and sucking infant. Pallas and others have said, that they descend in the blood from father to son. But their existence in the blood is generally denied, and if they really were there, they should be of the same description in all parts of the body. Lock, Rudolphi, and Bremser maintain that they are secreted by inflammation, the symptoms of which precede them, instead of being produced by them, as is generally supposed. In children, for instance, all possible symptoms are set down to worms, because these symptoms attend gastro-enteritis, which produces the worms.

(3.) *Tubercles.*—These morbid productions pass through three stages—miliary, crude, and mature 1. Miliary tubercles are small hard pellucid granulations, of a greyish colour. 2. Crude tubercles are larger than miliary; yellow, opaque and and cheesy. 3. Mature tubercles begin soften in the centre, and become ulcers.

Hippocrates thought they were inspissated mucus; Loyd, that they were the same as the inspissated bodies found in the lacunæ of mucous follicles; and Galen, that they were the cicatrices of the ruptured vessels, coming after hæmoptysis. Portal, Baillie, Heberden, and Broussais think they are enlarged lymphatic glands. Baron maintains they are hydatids, for hydatids and tubercles are often found together; and hydatids are sometimes surrounded by tubercular matter. Tubercles are chiefly found in the lungs, and never in any other part of the body, without being found in the lungs at the same time.

(4.) *Encephaloid Tumours.*—Fungus Hæmatodes, which is another name for Encephaloid Tumour, is the first of the three kinds of cancer, the other two being Melanosis and Scirrhus. Fungus Hæmatodes was first well-described by Pott. In the beginning of its course it is of a pale colour, irregular on its surface, and fringed with blood. In the second stage it becomes larger and redder, and in the third it forms a ragged unhealthy ulcer, which easily bleeds, and pours out sanies at every touch. It is found in the integuments, the eye, the testicle, the mamma, and the brain. It is sometimes encysted, and is said to be the only kind of cancer which has evident vessels.

(5.) *Melanosis.*—In the first state, melanosis is of a hardish consistence and black colour; in the second it becomes softer, and in the third pours out a black liquor and becomes a black cancer. Cullen and Carsewell state a fluid is poured out at first, which becomes indurated and excites inflammation around. Others say its origin is analogous to that of tubercles. It is found in almost all organs of the body. One case of general melanosis occured at the Infirmary of Edinburgh, and another case is related by Fordington. The black colour of this tumour is considered to be owing, either to a change in the blood, or to the deposition of new matter, much charged with carbon. A melanotic tumour is sometimes organized, and furnished with a peduncle.

(6.) *Scirrhus* —In the latent stage it is hard and cartilaginous, and of a yellow colour, with membranous crura internally, shooting in all directions. Between these septa the spaces are filled up with greenish coloured vesicles. In the second, or crude stage, it becomes ragged, nodulated and painful; though not tender on being handled. In the third stage it becomes open cancer, or carcinoma.

Carmichael thinks cancers are living animals. Baron says they are transmuted hydatids. Meckel says they always take their origin in sebaceous and mucous follicles; and certainly they are most common where these follicles are most abundant.

Oleum Empyreumaticum Stramonii. —This oil is distilled, not from the leaves, but from the woody part of the plant: its odour is less unpleasant, and resembles tar. The liquid, which comes over with it, is acid.

LECTURES ON SURGERY.

By John Hunter, F.R.S.

OF SUSCEPTIBILITY OF IMPRESSIONS; OF STIMULI; OF DISPOSITIONS OF THE BODY; OF HABIT AND CUSTOM.

Of Stimuli—When carried too far they become Irritants—Of Dispositions of the Body—Much less understood than those of the Mind—In Health arising from Impression—In Disease independent of it—Of Dispositions in the Mind—Their ultimate Effects are on the Body—Both compared with the Actions of Machines—Of the Memory of Impressions—In the Body as well as the Mind—Example—Effects of Repetition of Natural Actions Habit and Custom—Of Custom—Diminished Effects from repetition of Impression—Increased Effects.

Every species of matter, whether inanimate or animate, is capable of impressions, and the effects of the impression are according to the nature of the impression and the part impressed. A piece of dough receives impressions, but seems chiefly passive, not having the power of reacting, and making but little resistance. Elastic bodies receive impressions, which they restore in a contrary direction, producing ultimately various effects, which I have said are the soul or life of mechanism.

In animal bodies the effects of impressions are more various and complicated than in inanimate matter, because the most simple animal is more varied and complicated in its susceptibilities of impression, and of course more complicated in its dispositions for action.

In inanimate matter there are no actions within itself excepting the disposition to reinstate itself, as in elasticity; therefore impressions are not rising up within itself, in consequence of its own actions, as in animals, so as to produce consequent dispositions and actions, unless we could conceive that chemical and fermentative operations were of this kind. But animal matter having internal actions, which are producing impressions to action in the parts impressed; and, secondly, this kind of matter is capable of being acted upon or impressed by common inanimate matter, in both which cases the impression will be according to their nature and to that of the part affected.

When a man is so affected as to feel within himself that he cannot live, which is very common, it arises from the mind

being made acquainted with the state of of the body; the living powers are become weak, inactive, &c., and the nerves are communicating the intelligence. Accordingly, their actions are expressive of the extinction of life going on, and the action of the brain is expressive of such actions of the nerves; and as death is a something we know takes place, and this sensation of ours, is not such as we feel in health, we conclude that we cannot live, and we are often not deceived. This effect is often so quick that it may exceed the sensation of it, or at least may hardly afford us time to communicate these sensations to others.

The internal susceptibilities, with the consequent impressions and dispositions, are, first, of want, and, second, of repletion; and all the other internal operations of the machine arise naturally from these two, especially repletion, or digestion, circulation, respiration, secretion, the intercourse of the sexes, &c. But the first movement of these actions appears to require the impression of external matter, the powers of digestion being excited by food being thrown into the stomach, in consequence of which circulation, respiration, secretion, &c., all follow, arising out of the internal operations of the machine; all which have nothing to do with the sensitive, but are wholly dependent on the living principle. The desire of food, or susceptibility of the stomach to digest it, arises not from external objects, but from its own organization.

The second kind, susceptibility of external impressions, chiefly affects the sensitive principle, but may also affect the living principle, as in medicines. These are called stimuli; and when both principles are affected they may be said to have the management of the machine.

Impression, or stimulus, produces a disposition to act, or rather action, may or may not take place. But all impressions, either on the living or sensitive principle, are not stimuli; some go beyond stimulus, and become irritants; and other impressions are from their nature not stimulants, but prodnce a disagreeable impression either to the mind or body, and are also irritants.

Stimuli.—An animal, I have observed, is susceptible of impressions; which impressions, I shall now observe, are to become causes either of immediate or remote disposition to action, either in the part impressed, or by some other sympathy. These impressions, which excite or increase the disposition, are called stimuli; therefore we may say that a part is stimulated, or such an applicrtion, substance, or object is a stimulus; and a part either readily increased in action by impression, or brought into action, we say is very susceptible of stimuli. I could wish we had some one word expressive of this condition of the part stimulated, as stimulable, and also of the stimulus, as stimulative, to answer to irritable, sensitive, &c.

An impression which becomes a stimulus by sympathy may have been carried so far as to have been an irritator of the part to which it was applied, as a mote in the eye irritates the tunica conjunctiva, which irritation acts only as a stimulus to the lachrymal gland, for this gland can only act by sympathy. The power of a stimulus must be according to the nature of the stimulus and of the part jointly, for as almost every part of the body has a peculiarity in its mode of action, every part must have its peculiar stimulus.

An animal is so constructed as to have its parts susceptible of stimuli at one time and not at another. An animal has a power of improving its parts so as to make them susceptible of such stimuli as are adapted to the disposition of the parts: for instauce, an animal improves all those parts peculiar to the sexes. When those parts are perfect, which is called the age of puberty, they stimulate the mind and various other parts connected with that, giving rise to the passion of love, or the appetite of lust.

On the other hand, want becomes the cause of impression: a part becomes susceptible of such want, so that the ultimate effect or stimulus is completely produced, and an appetite arising from such stimulus takes place. Thus, the stomach when empty is susceptible of the stimulus of hunger. This kind of stimulus may be carried so far as to excite a diseased action, and must then be considered as an irritant.

Of Dispositions of the Body.—It may be difficult to define a disposition of the body, but that the body has dispositions is undeniable; and without knowing this, and therefore coming at or endeavouring to come at the knowledge of these dispositions of the body, a man must be a very confined surgeon in his practice. But the term disposition is more commonly applied to mind than to body. In the mind it is more easily comprehended, because the mind has the power of investigating its own feelings or dispositions, also the power of communicating them, by means of the body, to the minds of others,

so as to be understood or felt by those minds.

Every man has felt perhaps every disposition that can arise in the human mind, and is therefore perfectly sensible of those dispositions when they occur in others. But in the present inquiry the mind has no intelligence of the feelings or dispositions of the body, and is obliged to compare the effects of the one with those of the other, and where they are similar to suppose that the causes are also similar.

A disposition either in the mind or body, when in health, always arises from some impression; but as both mind and body are capable of seemingly spontaneous actions, there may arise from diseased dispositions in both, producing madness in one case and strong disease in the other.

As disposition may arise in consequence of some impression, it is capable of being destroyed by a counter impression, which in disease is the method of cure that will be called specific. Many dispositions wear themselves out, or are such as the body or part cannot go on with.

A disposition is different from a visible action, yet it is possible it may be itself an action. If we compare the actions of the body with those of the mind (which is comparing from analogy, and perhaps the only mode we have), we shall gain a pretty good notion of them.

A disposition of the mind, then, certainly arises either from some action of the brain, or a certain position of the parts of the brain takes place, giving them an inclination to produce action. But this action, or the position which produces the inclination to action, we know nothing of; it is only a sensation of the mind, or rather a consciousness of the mind of such inclination, which sensation, or consciousness, is different from the sensation of the brain, arising from other actions of this viscus: and also knowing that such action of the brain as produces such sensation in the mind, is endeavouring to set other parts of the body into action, which may be called voluntary, or rather actions in voluntary parts; and that when such actions of the brain have taken place, such dispositions of the brain are lost; I say, knowing so much, we may, from analogy, form some idea of bodily dispositions. But the dispositions of the body appear to differ in this respect from those of the brain, that in the brain there is only the disposition, the ultimate or consequent action taking place in the body. But this is, perhaps, because we are not much acquainted with the immediate effects of the disposition in the brain, being led away by the visible actions which take place in the body.

To explain this let us suppose that I have an impression made upon my body in such a manner that my sensitive principle is sensible of it; if, for instance, a man gives me a knock on the head that makes me angry, I form a disposition from this of resenting it; that disposition in my mind produces an action in my brain which forms a peculiar state of the mind, which is anger. If it was an action of some other kind, it might be affection or gratitude. The brain can do nothing by way of retaliation, whether it be gratitnde or revenge which directs, but to set parts of the body to work. Having received a blow on my head, the disposition in my brain to prodnce the action of revenge sets my hands to work to give my enemy another blow, and then the disposition is at an end. So that whenever the action has taken place, the disposition is gone. The ultimate effect is made sensible to us, and we are apt to imagine that it is the immediate act of the disposition of the brain; but it is only that the immediate action which took place in the brain made other parts of the body act secondarily, so that three actions are necessary to the ultimate effect; but they are not all three actions of the brain. There is, 1st, the action which produces the disposition; 2nd, the action of the nerves in consequence of the disposition; 3rd, the action of the voluntary muscles in consequence of the action in the nerves: but only the two first actions belong to the brain.

Let us see how far this disposition and consequent action of the brain correspond with the dispositions of the body and the actions arising in consequence of these dispositions.

If on any part of an animal an impression is made, a disposition is formed suitable to that impression, which is the first; and an action in the same part suitable to that disposition may take place, which is the second, and is the ultimate; but if a sympathetic action takes place, it becomes somewhat similar to the ultimate effect on the body, arising from a disposition in the brain.

We may, with great propriety, compare the disposition and action of either the brain or the body with the disposition or action of an elastic body. An elastic body, when acted on (which is similar to

an impression made on the body), acquires a disposition or inclination, which, if allowed, will produce action in all parts of the elastic body, which destroys the disposition. The disposition to action, and the action, are two very different things in themselves, even in the elastic body: when the elastic body has performed its action, it remains at rest until acted upon again; but it always requires action to destroy disposition.

We must make a material distinction between a disposition and an action in diseases, for what will cure an action will have no effect on a disposition.

Every machine is composed of very different parts, yet all tend to some ultimate effect. Every machine, whether natural, as an animal body, or constructed by art, however simple it may be, yet is always composed of more parts than one: and it must be observed, that no two parts have the same action, although all are tending, even in the most complicated, to produce some one ultimate effect.

For instance, some machines of art are intended for the division of time, as a clock, which may be so simple as to perform that effect by one wheel, the effect being expressed by an index. Some, again, are much more complicated, all the parts, however, being employed to the same ultimate effect, namely, the movement of this index, which expresses the ultimate effect; and the different parts composing the clock may be called organs.

So it is with natural machines; some animals are so simple as to have apparently but one operation, and that is support, and these may be called one organ. Others are complicated, being composed of different parts, whose actions and effects appear complete in themselves, as the action of a kidney, a liver, &c.; yet all combine to produce an ultimate effect in the machine, namely, the preservation and continuance of the species.

To produce the ultimate effect in any machine, there must be a succession of actions; one naturally arising out of another, each part taking on the action peculiar to itself; the preceding action being always the stimulus to the next succeeding one; and thus the parts go on acting in regular succession until the ultimate effect is produced, and then the whole is at rest until stimulated into action again. In some parts this is almost immediately, as in the heart, organs of respiration, &c., thus, when the heart has thrown out its blood, it has done its business; when we inspire and expire, the organs of respiration have done their business, but there is a necessity for the recurrence of the operation again, and so immediately that it seems almost constant. But in others there is a greater distance of time before the action is renewed, as in hunger, evacuation of the fæces, urine, &c.

An animal body so constructed gives us an idea of perfection, for as each part has its paticular appointment, one should naturally expect equality or powers suitable to these appointments would be found through the whole. But this certainly is not the case, at least in the more complicated animals, whatever it may be in the more imperfect or simple. We find this in the more perfect, where life depends for support on the action of some one part, as the heart; also where many actions of the animal depend on the powers of another part, as the voluntary actions on the brain; and not only the simple voluntary actions of the body depend on this viscus, but their real strength depends on it, for whenever the power of the brain is taken off, they waste; and this wasting does not arise from the brain supplying these parts with nourishment, and that being now cut off they lose their future support, but it arises from want of necessity to keep these parts in a state fit for action when action cannot take place, because the will cannot now stimulate them to action; and the same thing takes place in a proportionate degree when a joint is simply rendered, either wholly or in part, unfit for motion, where no injury has been done to the nerves. Hence it must appear, that as the power of support is in one part of the machine, and the power of many actions in another part of the machine, it is possible that all parts of the body may not be equally served by the first, namely, the heart; nor equally influenced by the second, the brain; and we do find that the more distant parts from these sources of power are the weakest. This, perhaps, is better illustrated in disease than by any actions of health. We may just observe, that all the vital parts are near the one, and all the acute sensations near the other. In disease we see a mortification arising in the extremities more than in the other parts, and more especially if the person is tall, so that the heart is not capable of propelling the support of life to those distant parts in such a state of the constitution.

How far the blood may lose its power

of nourishment before it reaches the extremities, I will not say. If our acute sensations are near to the brain, it is reasonable to suppose that proximity of parts adds to the power of the nerves in communicating sensation; if so, it is reasonable to suppose that proximity of parts will also add to that power which the brain has over actions of voluntary parts by means of the nerves.

On Habit and Custom.—Memory, or recollection of first impressions, has, I believe, principally been applied to, or supposed to be an attribute of the mind only; but we know that every part endued with life is susceptible of impressions, and also that they are capable of running into the same action without the immediate impressions being repeated. Habits arise from this principle of repetition of, or becoming accustomed to, any impression, and the same thing exactly takes place in the mind. The memory of the body is of much shorter duration than that of the mind. The mind not only goes more readily into action the second time of an impression, though a considerable distance of time has taken place since it went into the same action before, but seems to take up the action with more ease, from merely collateral causes, from a recollection of the similarity, or often without any possible recollection whatever, as if the actions, in consequence of the former impression, were taking place in the brain again, This does not appear to be so much the case with the memory of the body, for this only arises from immediate impression, but goes into action a second time more readily than at first. Possibly, however, the action arising from the first impression may be repeated from some collateral or similar impression to the first; if so, it comes very near to that of the mind, though not so strong.

A gentleman rubbed in mercurial ointment for the reduction of two buboes; he had only used it a few times when it affected his constitution so much that he was obliged to leave it off: he became feverish, the fever being of the hectic kind, with a small quick pulse, debility, loss of appetite, no sleep, and night sweats. He took the bark, with James's powder. As the effects of the mercury went off, and his buboes were advancing, it was necessary to have recourse to mercury again: he now rubbed in a considerable quantity without its having the least effect on his constitution or mouth; but the buboes spreading made me order it to be left off again, and they were opened. He had recourse to the ointment a third time without its producing any disagreeable effect. The buboes took on a healing disposition, but then became stationary. I ordered him to leave off the ointment, to go to the sea, and bathe, and then they began again to heal. In about three weeks it was thought necessary to rub in again: when he began, it almost immediately affected his mouth very violently; he left it off till his mouth was a little better, when he began for the fifth time, and it had not so much effect, and he was able to pursue the mercury. Now in this case he had lost the mercurial habit during the time he was at the sea, the parts had forgotten the mercury altogether, and the mercury coming on such a state of constitution, produced the same effect as it would have done if he had not taken mercury. So that the body had, as it were, lost the remembrance of the effect of the mercury on it in so short a time; but the mind would not have lost it.

Custom is with me the negative of habit; by custom comes an insensibility to impression, the impression diminishing although the cause is the same, and the parts becoming more and more at rest; whereas from habit there comes an increased facility to go into action, as also an acquired perfection in the action itself, the impression continuing the same, though the cause is diminishing.

These may be reckoned as secondary principles in an animal, and produce two very opposite effects, both according to their modes of impression.

Habit is the continuance of actions we have been accustomed to produce, without any immediate assistance, or even continuance, of the first cause, as a body set in motion continues to move after the cause of motion has ceased to act.

Custom arises from external impressions, either in the mind or body, and is of two kinds, one when, the cause continuing, the impressions, and consequently the actions, are diminished, the parts becoming habituated to the impression. We shall see the effect of this in our applications. If we apply a medicine to a sore, we shall affect it in one way or another, (it is immaterial which for the principal, but we will suppose it heals,) from becoming accustomed to that application, it shall lose the impression, and shall at last do nothing; therefore you will be obliged to make the application more stimulating, more active, or change it for something else. It is exactly so

with the mind; if a man goes into a strange place he is affected by the new objects about it; the next time he goes he is less struck; the third time less, till at last, when he goes into the place he can hardly perceive any thing strange in it. These very different effects arise from a difference in the degree of impression resulting from the state of the mind or body at the time. In the first instance, if the impression or cause be very slight, so as hardly either to alarm the part or the constitution, they will get familiar with it, and will become insensible to it; a ring on the finger, the use of snuff, our very clothes, and physic itself are striking and daily instances of this. The habit of insensibility will soon be formed if the sensations of the mind and body be not very acute. If the first impression be violent, and such as prodnces considerable effect, it is not necessary that the same degree of violence should be inflicted to produce a similar effect a second time. One can easily imagine that these impressions may be continued until the parts continue to act without the impression, which would then become habit. If a dose of an emetic be given, which affects the stomach much, the same quantity is not necessary a second time to produce the same effect; the second must be given, however, before the stomach has lost the impression of the first perfectly.

The same effect is produced on the mind as on the body, for whatever has made but a slight impression, soon wears out, and we think no more upon it. On the other hand, if an animal has met with anything that has affected its mind much, as fear, &c., it is not necessary for the object to appear in the same manner to produce a similar effect.

Those effects will be more or less, according to the state of the body or mind at the time of the first affection; the more irritable or the more ready it is to fall into the first action at the time, the more readily will it take it up the second time, although it may not be particularly irritable or susceptible of this particular action.

Habit.—A habit of acting arises from a repetition of acting, which repetition is custom, and which becomes the cause of the continuance of the same action. So that custom is always prior to habit, or, as it were, forms habit, which may be ranked as one of the secondary principles in the machine.

The first action being produced by a disposition in, or force upon, the part, this being repeated or continued a sufficient length of time, the action at length goes on, when that original disposition or force is gone, until some other power counteracts it, or it wears itself out. The more we have been in the habit of thinking on any object, the more readily does the train of thinking relating to that object recur. This principle in the animal is similar to the vis inertiæ in matter, for by it a motion begun is continued, and the remaining at rest is from the same cause. This principle becomes the cause of the actions of the mind; it does not allow men to think differently from what they have been accustomed to think. Men in general go through life with the same modes of thinking, and thus it becomes a cause either of the retardation or improvement of the understanding. It retards improvement, because it gets the better of even present sensations, and does not allow men to wander into novelty. It promotes improvement, because it makes men perfect in what they have been long engaged.

ON PULMONARY PHTHISIS IN CHILDREN,

By M. Baudelocque.

The following cases will serve to prove that the symptoms of pulmonary consumption in children are the same as in adults, whether these symptoms be local or general.

Julie Dupuis, aged three years and a half, was admitted into the hospital for sick children early in January. She was born of healthy parents, but had always been delicate. She was taken from nurse at two years old, and had a cough since that time.

During November and December, she was affected with acute pleurisy of the right sight, which necessitated the application of leeches.

The traces of pleurisy were ascertained; thick false membranes seemed formed between the pleura and right lung, There is not greater development on the side of the chest than on the opposite side. The sound is not clear, the bronchial respiration weak. In auscultation the mucous rale is alone heard, the cough is dry, and the pulse only gives one hundred pulsations in the morning, but increases at night, which is also the case with respiration, which in the morning is only repeated thirty times per minute. The child has diarrhœa.

During the eight days, the child was in

the hospital, she did not get better, the parents took her away on the 30th, she died of suffocation on the 31st.

On the post mortem examination, we found general and intimate adherences between the right lung, the costal pleura, and the diaphragm.

The left lung was free, the bronchial glands had undergone tuberculous degenerescence. In the right lung white tubercles from the size of a grain of millet, to that of a grain of hemp seed, cover the surface, or the centre of the organ. In some parts they form groups about the size of a filbert, round which the pulmonary tissue is indurated. The left lung is equally covered with tubercles, they are spread in two lobes, and as near the basis as the summit, none of them are soft. Some of these productions are also found in the false membranes lining the right lung. Ulcerations, and sub-mucous tubercles were found in the intestines, as well as in the liver and spleen.

Reine Hervet, eleven years of age was admitted into the hospital, on the 25th of January. Her father had a complaint of the chest, and died of the cholera. One of her brothers died at eighteen, of consumption, and one of her sisters at twenty-four, of the same disease. In her infancy she had various exsudations of the scalp, and glandulous congestions of the chest, which went off. She had the measles at seven, a continued bronchitis accompanied the exanthema, and lasted some time after it had disappeared. At this period a blister was applied to the arms, and the patient still keeps on a blister; the catarrh which succeeded the measles disappeared in a few months; the patient recovered her strength and grew fat; but the cough came on again, then ceased, then re-appeared. For the last ten months the patient had not ceased coughing, she spit blood several times but not in any great quantity. She complained of great pain between her shoulders, has been subject to diarrhœa and gradually wasted away. For the last three months her voice has become weak; fever towards evening, and nocturnal perspirations. The appetite has continued good: and the patient has had sufficient strength to get up every day.

On the 26th, at the morning visit, we ascertained the state of the patient to be as follows:—Dorsal decubitus, redness of the upper part of the cheek, contrasting with the paleness of the rest of the face, general thinness, œdema around the malleolæ, light hair, blue eyes, long eye lashes, well shaped thorax. Frequent cough, slight expectoration, the voice very feeble. On percussion, we found a *son mat* from the clavicle to the breast both right and left; on applying the ear to this region, a cavernous sound was distinctly heard and sero-purulent ronflement.

On the left this latter sign is wanting, but the cavernous respiration is evident. The respiration is accelerated 32 respirations in a minute, the pulse beats 80 or 90 times a minute in the morning, and rises to 100 or 120 in the evening. The bowels are not active; slight pressure on the abdomen gives no pain, the diarrhœa has ceased. She has a good appetite, asks for food, and wishes to get up; she is in full possession of all her faculties. Gummy beverage, mixture with half an ounce of syrup, broth, and an egg. During the three following days, the patient got up and took food.

The 29th she was up part of the day, in the evening she was taken suddenly with a pain in the right side of the chest, and with intense dyspnea.

The 30th the patient could not lie down, she sat up in bed, her lips were violet: the dyspnea violent: 72 respirations a minute, the pulse quick. The child expired at five in the afternoon.

The body was opened forty hours after death, the membrane of the larynx, the trachea, and bronchii red and thick in several places, no erosion or ulceration. The bronchial glands are hypertrophied, a very small number have undergone tuberculous degenerescence; adherences of long standing, unite the summit of the two lungs to the thoracic coats. The right pleural cavity contains about three glasses of serosity tinged with blood. That on the opposite side is empty. The three lobes of the right lung are strictly united. In the upper lobe is an excavation large enough to hold an egg, and containing brown pus.

The tissue forming the walls of this cavern is indurated; when cut in thin pieces, it falls to the bottom of the water. In the two other lobes there are several small excavations large enough to hold a pea or a filbert. In the interval there are rough tubercles, and infiltrated tuberculous matter. In the inferior lobe are some portions of pulmonary tissue, air proof. To the left, large excavation, irregular at the top. The same alteration of the pulmonary parenchyma as to the left. Nothing in the heart or pericardium. The stomach large. The mucous membrane pale, and partially softened.

In the small and large intestines there are some submucous tubercles and some ulcerations. In the interval the mucous membrane has pretty good consistence.

The matter contained in the rectum is solid. The mesenteric glands are rather more developed than in the normal state, but are not tuberculous. The liver, spleen, and kidneys are free from alteration, as well as the encephalus and its appendages.

3rd. Case.—Antoinette Micotte, 14 years of age, was admitted into the hospital on the 10th of January. She was rather tall, and the thorax well formed, her father died of a consumption at the age of forty-three: she is the youngest of fourteen children by the same father, who all died before they reached their tenth year. The mother has good health. In her infancy, Antoinette had congestion of the cervical ganglions, which have since disappeared. She had the measles at eight years old, but had no cough, after this complaint. Ten months since she was attacked with acute affection of the chest, which confined her to her bed for several days. She however was soon convalescent. Three months since, this girl left Auvergne, to come to Paris. She had a cough, with great pain in the length of the sternum, the diarrhœa came on. These symptoms continued till the patient was received into the hospital. During these three months, she expectorated blood in small quantities, the cough continued, and was sometimes so violent as to induce vomiting; she became feverish towards night. Her appetite continued good; a seton on the arm, blister on the chest, and pectoral beverage were prescribed.

When she came to the hospital, she was pale and thin; and so weak that she was compelled to remain in bed; she is hoarse, and the cough frequent, night and day. A dull sound is heard in the whole extent of the chest; and on the ear being applied to the subspinous region, there is pectoriloquy, catarrhal rale; lower down, there is a mucous rale. The catarrhal rale and pectoriloquy are equally manifest in front between the breast and the clavicle. On the right, the sound is clear, the respiratory noise is heard distinctly.—The expectoration is grey, puriform, and contains streaks of blood and opaque lumps. The respiration is accelerated, 32 respirations in a minute; the pulse 96 in the morning, but increases in the evening. Towards four o'clock the face becomes red, the skin heated, the pulse increases and persists until the morning, when abundant perspiration comes on. The abdomen voluminous—the stools numerous, but no cholic. An infusion of marsh mallow was prescribed, and a mixture with 1, then 2 grains of tartaric stibiate, pills of digitalis and sulphate of quinine.

The mixture of stibiate disagreed with the patient, it brought on nausea, and vomiting; no improvement took place: and an attack of dyspnea terminated fatally the 31st of January.

At the post mortem examination we found an enormous tuberculous excavation at the bottom of the superior left lobe; ancient adherences unite the summit of the left lung to the costal pleura. In the inferior lobe there are several other tuberclous excavations, but of smaller dimensions, and in the interval, raw tubercles, the bronchi on the left side are red, the bronchial glands hypertrophied, and transformed in tuberculous masses. The left lung has no cavern, but there are small tuberculous lumps, and milliary tubercles in great number; various parts of the pulmonary tissue are indurated.

The peritoneum contains a pint of transparent serosity, the ganglia surrounding the liver and pancreas, have undergone tuberculous degenerescence. The stomach is spacious, its surface pale and thickened. In the lower half of the small intestine, and in the large intestine, there are several ulcerations; some spread round this canal. There is nothing remarkable in the other viscera.—*Continental and British Medical Review.*

OBSERVATIONS ON THE DIAGNOSIS OF PNEUMONIA.

By Dr. Addison.

(From Guy's Hospital Reports.)

Any attempt at a further elucidation of pneumonia, after the splendid performances of Laennec, may probably appear presumptious; and especially so, when made by one who acknowledges himself indebted for almost all that he knows of thoracic diseases to that truly great man at once the most distinguished and most successful cultivator of medical science that ever adorned the profession. When however, it is recollected how vast and barren was the field of his inquiries when he commenced his brilliant career—and when our former ignorance is compared with the knowledge that resulted from his unprecedented discoveries—our astonish

ment is, not that he should have left something undone, but that he should have done so much. It is with the most profound deference and respect for his memory therefore, that I venture to add this tributary mite to the riches of one of his favourite essays. I cannot but feel, also, that some apology is due to the profession, for presuming to direct attention to a subject with which the works of Laennec must already have made them familiar; and particularly to those who have so far resisted the influence of prejudice as to have made themselves conversant with the use of the stethoscope. My apology is, that the very familiarity of the subject appears to have lulled medical men in general, and even the stethoscopist, into a too passive confidence in what is already known: and has probably proved a check to that correction and improvement which Laennec himself was at all times so eager to accomplish.

The main object of this brief communication is, to make some addition, however trifling, to the ordinary means of diagnosis; since experience has forced upon me the conviction, that there are few acute diseases more frequently mistaken or overlooked than pneumonia, to the detriment of the patient, and no small embarrassment of the practitioner.

In order to make myself understood, I may perhaps be permitted to take a very slight survey of the pathology, signs, and symptoms of the disease; merely observing, at the outset, that, in doing so, I shall adhere as closely as possible to the purely practical tenor of our Reports; indulging in theory no more than is unavoidable, in arranging and reasoning upon facts derived from the sick chamber and the dissecting-room. To the facts, or supposed facts, alone, do I attach any importance. The use of these facts must be left to the judgment and discernment of the reader.

In pneumonia, the inflammation is manifestly seated in or around the air-cells, or in both situations. It is perhaps of little importance, whether we conclude it to be seated primarily and essentially in the one or in the other of these structures: although, for my own part, I entertain no doubt whatever of its being primarily and essentially seated in the interior of the cells themselves—a belief drawn from the successive local changes observed to take place as the disease advances. In the first stage of the disorder, we find the cells red, and filled with a serous-looking and sometimes bloody fluid, rendering the lungs more heavy, dense, and œdematous, whilst they still retain their tenacity.. At a more advanced period, or second stage, the cells are found filled up with red solid matter, which appears to consist of the thickened parietes of the cells themselves: for if the lung be torn, and the torn surface examined with a magnifying-glass, it seems to be made up of innumerable minute red grains, just such as one might conceive to result from a filling up of the cells in the manner supposed. At this period, the serous-looking fluid has disappeared, the lung is comparatively dry, and the tenacity of the solidified part is so far diminished, that it may be readily broken down by forcing the finger into it: this is what has been called red hepatization. At a later period. and sometimes apparently without having been preceded by the red granules, the solidified lung presents a grey appearance, an albuminous matter seems to occupy the place of the granules, or rather their centres, constituting the grey hepatization. This albuminous matter is sometimes firm and fixed, at other times it is less plastic, and occasionally, especially in bad constitutions, takes on a more decidedly purulent aspect, and may be squeezed out by pressure; or, as the cohesion of the pulmonary tissue is often, under such circumstances, very much diminished, the slightest pressure of the finger causes it to break down into a semi-fluid mass, resembling an abscess.

It is not necesary to be more minute in describing the pathlogical changes which take place in the progress of pneumonia: it is sufficient to remember, that, in the first stage, the cells contain air and serous-looking and sometimes bloody fluid, as shown by the peculiar crackling sound, and escape of the fluid on squeezing a cut surface; that, in the second stage, the cells are solidified, comparatively dry, and, sooner or later, have poured into them an albuminous matter, either solid and fixed, or, more rarely, a matter approaching the character of pus. The stethoscopic signs indicative of these respective changes are such as might be expected, and are easily understood. Whilst the cells contain air and serous fluid, there is little or no dullness of sound on percussion, but during respiration, we hear the crepitating rattle—a rattle which undoubtedly depends upon the presence of air and fluid in the cells, for it is observed in cases of œdema of the lungs, and in some instances of pituitous catarrh, as well as in the first stage of pneumonia.

When the cells are solidified, and admit no air, we have dulness of sound on percussion, bronchophony, and bronchial respiration, at least when the consolidation is considerable, and seated near the surface. Such are the stethoscopic signs of simple pneumonia: they are quite characteristic, and are pretty uniformly present, except under very peculiar circumstances.

If an opportunity present itself of examining the body, when a lung consolidated by pneumonia is retrogading towards a recovery of its normal state, we commonly find the cut surface of the portion previously hepatized of a pale or pinkish hue; or we find it presenting a a mixture of pale, pink, and grey: it is still more friable or lacerable than natural; and the cells are again more or less loaded with serous-looking fluid, rendered frothy by squeezing the lung, in consequence of the presence of a considerable number of air bubbles. It would also appear, that the further changes consist in the absorption of the effused fluids, a gradual increase of the tenacity of the pulmonary tissue, and a more or less complete restoration of the normal state. In some instances, however, when the albuminous matter thrown out is of the more plastic or organizable kind, it fails to be entirely absorbed, and part of it permanently remains. Under these circumstances, we find it, at an after-period, either in small detached, and more or less rounded mases, or more extensively and more irregularly diffused through the pulmonary tissue. When distributed in small insulated portions, I believe it to constitute one of the forms of albuminous deposit, indiscriminately called tubercles; whereas, when more extensively and irregularly diffused, it has, in like manner, been regarded as a form of tubercular infiltration. The history, however, of the patients case, in many instances, as well as the local appearances themselves, lead me to the conclusion, that they are merely the result of a previous attack of pneumonia. We often learn, on inquiry, that, at some former period, perhaps years before, the patient had an attack of inflammation within the chest; whilst, if he die of some other disease, we almost uniformly discover, on dissection, unequivocal evidence of antecedent inflammation. The evidence consists in thickening and adhesions of the pleuræ, especially in the neighbourhood of the appearances in question, together with induration and puckering of the pulmonary tissue immediately surrounding each albuminous deposit: or, when the deposit is irregular and extensive, we often have an actual deformity and puckering of the pleura above the infiltrated parts. This view of the of these albuminous deposits will probably serve, in some measure, to explain why they are much less uniformly found in the apices of the lungs than ordinary tubercles.

It has been observed, that these deposits may remain passive for an unlimited period, and without undergoing any very appreciable change, except perhaps a conversion of some of them into calcareous or chalky masses, especially when deposited in the upper lobe of the lung: it would nevertheless appear, that the vital influence by which they are maintained in their integrity is so extremely slender, that if inflammation happen to be set up around them by any accidental cause, and especially if the vital powers of the patient have been greatly impaired, that influence is so far exhausted, that they lose their cohesion, and soften;—the softening commonly first taking place in those portions most remote from the more highly organized living structures: they soften in the centre; the softening proceeds outwards, and, in the end, causes the formation of vomica, and so produces one of the modifications of phthisis pulmonalis. Such, at least, are conclusions to which repeated observation of the living, and dissection of the dead, have led me, in regard to this part of the subject.

Having premised these very superficial remarks, I shall now proceed to the reputed functional signs or symptoms of pneumonia; for it is to the unsteadiness and fallaciousness of these, that errors in diagnosis are chiefly attributable; and, consequently, it is to them more particularly that I am desirous of directing attention.

The characteristic symptoms of pneumonia enumerated by Laennec, are, in an *obtuse and deep-seated pain in the chest*, *dyspnœa*, *hurried respiration*, *cough*, and *peculiar expectoration:* but, in reference to these, he tells us, that each of them individually may occasionally be absent, and, indeed, that they may all be absent in the same case. Now, were it quite correct to assume that the character of pneumonia is that which is expressed by the above symptoms, that the reputed deviations and exceptions alluded to by Laennec are only of very rare occurrence, and that obscurity happened only in the pneumonia of old people, and in cases

complicated with other diseases, there might probably be some excuse for resting satisfied with the present position of the subject: but if it be as true, as I am convinced it is, that these reputed deviations and exceptions, regarded as obscure, are of extremely frequent occurrence, that they are met with at every period of life, and in every variety of constitution; and that they are very far indeed from being limited to old persons, and to what have been called complicated cases; I hope to be pardoned if I make an attempt, in some degree to unravel the difficulty, and place the subject, if not in a more safe and practical point of view.

I have been led to the conclusion, that cases of pneumonia characterised by obtuse and deep-seated pain, dyspnœa, hurried respiration, cough, and peculiar expectoration, are, in truth, themselves the exceptions, in a pathological sense; and that although most frequently met with in practice, they are, in fact, cases of complication. It may be said, if such cases of complication be those most commonly encountered in practice, why interpose a mere pathological substlety, to disturb the practical rule? To this I oppose my belief, that it is an adherence to such a general character of pneumonia that has led, and is constantly leading, to an oversight—to a neglect of the disease, when it occurs in what I am disposed to regard as its more *simple form:* and as cases partaking more or less of this simple form of pneumonia are of frequent occurrence, I am willing to persuade myself that what follows may have the effect of diminishing the liability to the errors alluded to.

In *simple pneumonia*, after chilliness, shivering, feeblencss, and depression, the patient experiences, for the most part, strongly-marked symptoms of febrile reaction, giddiness, confusion, and sometimes intense pain in the head; occasionally delirium, especially towards night; *the skin acquires a pungent heat*, generally accompanied by dryness, more rarely by moisture; the pulse is full and strong, perhaps labouring and sluggish; the face is usually more or less suffused with a livid flush, accompanied by an expression of distress; the tongue is foul; its substance is more injected than in ordinary phlegmasiæ, and in a short time it manifests a tendency to become dry and brownish; the respiration is somewhat hurried, but *there is seldom any very obvious cough or expectoration, and sometimes none at all;* in short, the whole assemblage of symptoms bears a most striking resemblance to those of a severe attack of common continued fever of the typhoid type, for which it is so repeatedly mistaken. If this form of the disease occur in moderately good constitutions, and is overlooked, especially if stimulants be administered on the supposition of its being a severe case of typhoid fever, it very commonly happens that the general prostration increases, the delirium or oppression of the brain is aggravated, the tongue gets dry and black, and the teeth covered with sordes; the breathing becomes more hurried, occasionally with a frequent slight hacking cough, and now and then a little bloody expectoration; the pulse gets flaccid, frequent, and feeble; and at length the patient dies.

Notwithstanding its close resemblance to a severe attack of continued fever—a resemblance so great, that even the stethoscopist is occasionally thrown off his his guard—attentive observation will, in most cases, enable us to recognise the difference. The attack, in general, is more abrupt, and often follows some manifest exposure to cold or wet. The countenance, though congested and somewhat distressed, has not the dejection and stupidity so remarkable in fever; it displays more intelligence, and, although confused and perhaps slightly delirious, the patient on being roused, commonly evinces a clearness and vigour of intellect not found in fever. The condition of the tongue also furnishes a valuable diagnostic sign. We know that, at the onset of fever, the contrast between the vividly-injected tongue and its white or grey fur is very striking; it is, in general, much less so in pneumonia. In the latter, if I may be allowed the expression, it is more the tongue of a phlegmasia; the hurry of respiration in pneumonia is often not more than we commonly perceive amid the general distress of fever; and I repeat, that neither cough nor expectoration is necessarily present in a very appreciable degree. But of all the symptoms of pneumonia, the most constant and conclusive, in a diagnostic point of view, is *a pungent heat of the surface.* By this symptom alone, the first stage of pneumonia may, in most instances, be readily recognised: by this symptom alone, I have repeatedly pronounced the existence of pneumonia, before asking a single question, or making the slightest stethoscopic examination of the chest. The presence of this symptom has scarcely ever yet deceived me, even in the most complicated forms of inflammation within

the chest. I by no means contend that it is necessarily present at some period of every case, although I do not know to the coatrary ; but I feel justified in affirming, that when inflammation is confined to the chest, however varied may be the tissues involved in the inflammatory process, provided this symptom be present, pneumonia may be confidently pronounced to form a part, in nineteon cases out of twenty, and I believe in a much larger proportion.

A similar pungent heat of the surface is now and then observed in certain forms of renal dropsy; more frequently in continued fever, especially in children; and still more commonly in the eruptive fevers of the exanthemata and erysepelas; and, as such cases may supervene upon already existing disease within the chest, the fact ought to be carefully remembered, lest a most valuable diagnostic sign should rather mislead than assist us. It is in original inflammation within the chest that it proves so constant and conclusive a sign of pneumonia, but on every occasion, when present, it ought to lead to a most careful scrutiny, by means of the stethoscope.

I am unwilling to swell this communication by a detailed recital of individual cases, but were it otherwise, it would be easy to introduce a very great variety of instances, in which simple pneumonia has been mistaken for common fever of a typhoid type. I have repeatedly witnessed it in children; the first suspicion of it having been generally suggested to me by recognizing, on applying the hand to the surface, the peculiar pungent heat already noticed. I not long ago had an example in a young woman who was supposed to be labouring under a severe attack of bilious fever; so called, because pneumonia of the right lung was accompanied, as is not unfrequently the case, by a sallowness, or almost jaundiced aspect of the patient's countenance. I have a very similar case in Miriam's Ward at this time, also occurring in a yonng female. In elderly persons it is so common, that when a case of typhus is represented to have occurred in any individual above fifty years of age, without evidence of the existence of the disease in other branches of the family, I confess that I considered it at all times an equal chance that it is, in reality, a case of pneumonia. An instance of this kind I saw very recently: the person was npwards of sixty, but of a hale constitution, and presented most of the ordinary signs of continued fever, whilst the pulmonic symptoms were so slight as never to have attracted the least attention. This brief representation may probably suffice to fix attention upon the likelihood of the presence of pneumonia in cases of supposed continued fever.

The more simple form of pneumonia not unfrequently assumes another appearance, which has occasionally led to a belief that the brain was the seat of the disorder; the original affection of the lungs being so obscure as to be entirely overlooked. I have, within a short period, seen two cases of acute pneumonia in vigorous adults, in which, at the commencement, and for some days, the disturbance of the brain was such, that remedies were applied exclusively for the relief of that organ. In both instances, the inflammation was very intense, and was, at a latter period, attended with cough, expectoration, and other signs commonly regarded as characteristic of pneumonia.

Some time ago I was requested to see an elderly man, who appeared to be labouring under obscure symptoms of mental aberration, and was supposed to have become insane. He looked pale, his countenance was somewhat anxious, his tongue was loaded, slightly brown, and disposed to become dry, he was occasionally incoherent, and wandered about the ward in a wild and unaccountable manner, but had neither cough nor expectoration sufficient to attract any particular. On examination, I found him labouring under pneumonia already advanced to hepatization. He recovered. A similar case is now under treatment in the hospital.

In infants and very young children, such cases are by no means rare, and stimulate hydrocephalus. In one instance where hepatization had taken place, the most prominent symptom was convulsions, for which various applications had been made to the head.

Such are some of the affections of the brain, to which pneumonia not unfrequently gives rise—secondary affections, calculated to mislead the most wary, and such as must inevitably distract the attention, and perplex the judgment of those who do not habitually have recourse to the stethoscope"

If the representations I have made be correct, they certainly lead to an inference, that even acute disease does not, when confined to the air-cells, necessarily give rise either to cough or expectoration

—symptoms, perhaps, too much relied upon, in recognising, or even suspecting, affections of the lungs.

Without arguing the question, whether it be possible to expectorate a thin watery fluid, which must necessarily gravitate in the cells of the lungs, I may venture to state, that I entertain very strong suspicion that the cough and expectoration so commonly observed in pneumonia depend altogether upon the accidental implication of the bronchial tubes, and that, without a doubt, the degree of these symptoms depends upon the degree of that implication. Certain it is, that the most intense pneumonia may exist, even in male constitutions, with cough and expectoration so slight as to pass unnoticed; and it is not difficult to suppose, that, when so slight, they may depend rather upon mere sympathetic irritation of the minute bronchial tubes in the immediate neighbourhood of the inflamed tissue, than upon any considerable degree of actual inflammation set up in them. It is true, that, on dissection, we very commonly find the mucous membrane of the smaller tubes reddened; but whether from inflammation, or not, is by no means so easily determined. I am disposed to think, that, in simple pneumonia, the small tubes are either not at all inflamed, or only inflamed in a very slight degree, and that, when more decidedly involved, their inflamed state gives rise to the cough and peculiar viscid expectoration described as characteristic of pneumonia in general. This complication is indisputably more frequently present than absent; a circumstance little calculated to excite surprise, and one probably sufficient to account for the symptoms which attend the complication, having usually been described as those essential to, and characteristic of, pneumonia.

When cough and expectoration are as well marked as they are commonly described to be, they cannot fail to attract the attention of every one, and all difficulty of diagnosis ceases. The same may be said of those cases of pneumonia in which we have the mucous membrane of the bronchial tubes involved to such an extent, that, by universal consent, the disease is said to be complicated with bronchitis, and in which we have the expectorated mucus, though considerable in quantity, more or less tinged of a brownish or saffron colour. It does not, however, necessarily follow, that, when pneumonia is present, the mucus of the accompanying bronchitis shall be tinged brown: on the contrary, the discoloration is often, in such cases, altogether absent, its presence and degree depending upon the quantity of blood which happens to be effused; exactly in the same manner as the ordinary *viscid sputa* of pneumonia may be colourless, or may be of a gamboge yellow, light green, or of a rusty or red colour, according to the same accidental circumstance. Of course, in these bronchial complications, we have, superadded to the stethoscopic signs already mentioned, a mucous rattle, which, when hepatization takes place, is rendered much more distinct, in consequence of the consolidated lung being a better conductor of sound.

In concluding this slender contribution to diagnosis, I shall merely observe further, that unless complicated with pleurisy, pain of any sort is rarely complained of by a patient affected with simple pneumonia, in whatever position he may be placed. When, however, the bronchial complication is such as to produce severe cough, he not unfrequently experiences a burning or tearing pain, or rather soreness, more or less diffused through the affected parts—a symptom probably resulting from the violence inflicted upon the inflamed tissue during the repeated fits of coughing.

THE ANATOMIST.

Foramen commune anterius, is the hole by which the choroid plexuses unite anteriorly. It forms a medium of communication for the two lateral and the third ventricles.

Infundibulum, an opening leading from the anterior and inferior part of the third ventricle to the pituitary gland.

Iter a tertio ad quartum ventriculum, an opening in the posterior part of the third ventricle, under the posterior commissure and tubercula quadrigemina, and leading obliquely backwards and downwards to the fourth ventricle.

Anterior commissure, a medullary, round cord, anterior to the crura of the fornix, and passing transversely from one corpus striatum to the other.

Posterior commissure, extends transversely from one optic thalamus to the other. It is shorter and smaller than the anterior commissure.

Tubercula quadrigemina, four eminusces, called also nates and testes; situated under the posterior part of the velum

interpositum, and the pineal gland; the two anterior, the nates, are connected to the optic thalami; the posterior, the testes, being connected to the cerebellum by the following processes.

Processus a cerebello ad testes, two thin medullary plates, which pass obliquely from the cerebellum upwards and downwards to the testes.

Valve of Vieusseus, a layer of cineritious substance, of a triangular form, attached by its sides to the processus a cerebello ad testes, by its base to the cerebellum, and by its apex to the testes.

Fourth ventricle, is exposed by cutting through the valve of Vieusseus. It is bounded anteriorly by the pons Varolii, laterally by the processes a cerebello ad testes, superiorly by the valve of Vieussens, inferiorly by pia mater and arachnoid membrane, and posteriorly by the cerebellum.

Calamus scriptorius, the fissure seen upon the posterior surface of the pons Varolii, in the fourth ventricle; from either side of which four or five lines proceed.

Choroid plexus of fourth ventricle, a small fold of pia mater, which enters the ventricle as this membrane, is passing from the cerebellum to the spinal chord.

CEREBELLUM,

Consists, like the cerebrum, of two hemispheres, united anteriorly by the pons Varolii, and posteriorly by the superior and inferior vermiform processes.

Hemispheres, are flat superiorly, where they correspond to the tentorium, and convex inferiorly where they rest in the inferior occipital fossa: the surface of each presents semicircular narrow lines, arising from the laminated arrangement of the cineritious portion of the organ; between these lamina the pia mater enters, but the arachnoid passes over them.

Crura cerebelli, two medullary chords which pass from either hemisphere and unite in the pons Varolii.

Superior vermiform process, a small conical eminence corresponding to the superior and central part of the cerebellum.

Inferior vermiform process, larger than the superior and corresponding to the inferior and central part of the cerebellum and the commencement of the spinal chord.

Arbor vitæ, the branching of the medullary substance of the cerebellum, and exposed by making a verticlal section.

Corpus dentatum, a small oval mass of cineritious substance, surrounded by medullary, and exposed upon making a section of the cerebellum parallel to, but an inch distant from, the median line.

MEDULLA OBLONGATA,

A large conical process of medullary structure, extending from the lower margin of the pons Valorii to the commencement of the spinal chord. It is rather more than an inch in length and presents the following six bodies, which are separated from each other by distinct grooves.

Corpora pyramidalia, the two anterior eminences of the medulla oblongata.

Corpora olivaria, smaller than the pyramidal bodies, are situated laterally.

Corpora restiformia are large, and situated posteriorly.

BASE OF THE BRAIN

Presents on either side of the median line the anterior and middle lobe of the cerebrum, separated from each other by the fissure of Sylvius, and a lobe of the cerebellum resting upon the posterior lobe of the cerebrum. In the median line, proceeding from before backwards, is the anterior extremity of the median fissure, the lower extremity of the corpus callosum, the optic commissure, the tuber cinereum, the corpora albicantia, the pituitary gland and infundibulum, the locus perforatus, (on either side of this is the crus cerebri,) the pons Varolii, and lastly the posterior extremity of the median fissure.

ORIGIN OF THE CEREBRAL NERVES.

First pair (olfactary), each arises by three roots, the external, long and white from the fissure of Sylvius; the internal, also white from the posterior internal surface of the under part of the anterior lobe and the middle, short, cineritious, from the posterior edge of the anterior lobe.

Second pair (optic), each arises by two roots from the corresponding notis and testis; that from the nates joins the corpus geniculatum externum, the other the corpus geniculatum internum; the roots then unite and form the tractus opticus, this passes around the crus cerebri, to which it is united by fine cellular tissue, the tracts, one from either side, then unite in the optic commissure, having previously sent a few fibres into the tuber cinencum and from the anterior part of this commissure proceed the optic nerves.

Third pair (oculo-muscular), each arises from the inner side of the crus cerebri, near the pons Varolii, and from the corpus pyramidale, as this body passes through the pons.

Fourth pair (inner oculo-muscular), each arises from the processus é cerebello or its corresponding side by two or three fine ligaments.

Fifth pair (trigeminal), consists of two portions, one for sensation, the other for motion. *The motion division* arises from the corpus pyramidale, with the pons varolii, and the sensory division from the angle between the crus cerebelli and the pons varolii.

Sixth pair (abducentes), each arises from the corpus pyramidale near its junction with the pons varolii.

Seventh pair consists of the *portio dura*, or facial, and the *portio mollis*, or auditory. *The portio dura* arises from the groove between the corpus pyramidale and olivare, a little below the pons varolii. *The portio mollis* arises by three or four white lines from the calamus scriptorius in the fourth ventricle.

Eighth pair consists of the *glosso-pharyngeal*, *pneumo-gastric* and *spinal accessory*. *The glosso-pharyngeal* arises from the groove between corpus ollvare and corpus resitiforme, by four or five filaments. The *pneumo-gastric* arises in the same groove, but below the glosso-pharyngeal, by eight or ten filaments, and the *spinal accessory* arises from the side of the cervical spinal chord, about its middle, by several filaments.

The ninth (linguales) each arises by seven or eight filaments from the groove between the pyramidial and olivary bodies, about half an inch below the origin of the sixth.

CEREBRAL NERVES.

First pair (or olfactory), sends off three sets of branches. *Internal branches* to septum nasi; *middle branches* to mucous membrane of roof of each nostril; and *external branches* to spongy bones.

Second pair (or optic), pierce sclerotic coat of eye, and form the retina.

Third pair (or motores oculorum). *Superior, or smaller branch*, supplies the superior rectus, and the levator palpebræ. *Inferior, or larger branch*, supplies the internal rectus, the inferior rectus, and the inferior oblique; and also sends a branch to the recticular ganglion.

Fourth pair (or pathetici), are distributed to superior oblique muscles of eye. gasserian ganglion, and divide into three

Fifth pair (or trigemini), first from the main branches. *Ophthalmic division.*—1. Descending branches to unite with the sympathetic. 2. Lachrymal nerve, which sends a branch through the spheno-maxillary fissure, to unite with the superior maxillary nerve, a branch through the malar bone to the cheek (called cutaneus malæ), the terminal branches being distributed to the lachrymal gland, and the conjunctiva. 3. Frontal nerve, sends a branch to unite with the infra-trochlear branch of the nasal—a supra-trochlear branch, which becomes the internal frontal, and the proper frontal, which passes over the frontal bone to the forehead. 4. Naso-ocular nerve, which sends a branch to communicate with the sympathetic—a branch to the third pair—two long ciliary nerves—a branch to the lenticular ganglion—the infra-trochlear branch, and the nasal branch. *Superior maxillary division.*—1. Orbital branch, sends off a malar twig and a temporal twig. 2. Two branches to Meckel's ganglion. 3. Posterior dental, sends of an anterior branch to the buccinator mnscle and gums, and a posterior branch to the molar teeth. 4. Anterior dental, to the antrum and teeth. 5. Infra-orbital, distributed to the face. *Inferior maxillary division.* 1. Superior or external branch sends off deep temporal twigs, a masseteric branch to masseter muscle and temporo-maxiliary articulation, a buccal branch to the buccinator, temporal and pterygoid muscles, and a pterygoid branch to the pterygoid and palatine muscles. 2: Inferior or internal branch, sends off the temporo-auricular, which goes to the cartilages of the ear and temple—the inferior dental, which gives off the mylo-hyoid nerve, and the mental nerve; lastly, the second division or the gustatory, to muscles, glands, and papillæ nf the tongue; it is joined by the chordi tympani nerve.

GANGLIONS IN CONNEXION WITH THE FIFTH PAIR.

Gasserian Ganglion.—A large grey semi-lunar body, placed in the middle fossa of the base of the cranium, concave posteriorly, where it receives the fifth nerve, and convex anteriorly aud externally, from which part proceed the three main divisions of the fifth, just described.

Meckel's Ganglion.—A little red body of a triangular shape, situated deep in the fat and cellular tissure of the pterygo-maxillary fossa; it communicates superiorly by two small nervous twigs with the second division of the fifth, and sends off—1. Spheno-palatine nerve to the mucous membrane of the superior and middle spongy bones, from which proceeds the naso-palatine branch, which runs along the septum nasi, and terminates in the

foramen incisivum. 2. Palatine nerve, descends in the palatine canal, and divides into anterior branches which supply the teeth, and posterior and middle branches, which supply the amygdalæ soft palate, uvula. 3. Vidian nerve, passes backwards through the vidian canal, enters the cranium by the foramen lacerum anterius, and divides into an inferior and a superior branch, having first sent filaments to the sphenoidal sinus; the inferior branch enters the cavernous sinus, and unites with the branches of the sympathetic, whilst the superior branch runs beneath the lasserian ganglion on the petrous portion of the temporal bone, enters the hiatus Fallopii, attaches itself to the portia dura nerve, again leaves it, and enters the tympanum a little below the pyramid, and is here called chorda tympani. It then passes between the long crus of the incus and the handle of malleus, emerges from the tympanum by the glenoid fissure, unites with the gustatory nerve, and at the submaxillary gland it terminates in a small ganglion named after Boch.

The lenticular ganglion is situated between the optic nerve and external rectus muscle; it receives at its posterior superior angle a branch from the nasal branch of the fifth, and by its posterior inferior angle a branch from the inferior division of the third. Its anterior angles furnish the ciliary nerves, about twenty in number, which run along the optic nerve, pierce back part of the tunica sclerotica, run forward between it and the choroid coat, enter the ciliary ligament, and are ultimately distributed to the iris.

The naso-palatine ganglion is said to exist in the anterior palatine hole, and to be formed by the auterior palatine branches from Meckel's ganglion.

The submaxillary ganglion lies at the edge of the submaxillary gland, and seems to be formed by the termination of the chorda tympani nerve.

Sixth pair, or abducentes, are distributed to the external rectus muscle of each side exclusively, but receives two filaments from the sympathetic in the cavernous sinus.

Seventh pair consist of two portions, viz.:—Portio dura and portio mollis.

Portia dura, or facial nerve.—1. Twigs to tensor tympani and stapedius muscles. 2. Posterior auricular. 3. Stylo-hyoid nerve to the digastric and styloid muscles. 4. Submastoid nerve. 5. Cervico-facial division, which sends off maxillary branches, submaxillary branches, and cervical branches. 6. Temporo-facial division, which sends off temporal branches, malar branches, and buccal branches. *Portio mollis,* or auditory nerve. 1. Branch to cochlea. 2. Branch to vestibule and semicircular canals.

Eighth pair, or par vagum, consists of three portions, viz.:—Glosso-pharyngeal, pneumo-gastric, and spinal accessory. *Glosso-pharyngeal,* or first branch of the eight. 1. Twigs through the temporal bone to the carotid plexus in the cavernous sinus. 2. Branches to the pharyngeal plexus. 3. Branches to the tonsillary plexus. 4. Branches to the hyo-glossus, stylo-pharyngeus, and superior and middle constrictors of the pharynx, mucous mucous membrane of fauces, &c. 5. Branches to the papillæ and mucous membrane at the root of the tongue. *Pneumo-gastric,* or second branch of the eighth 1. Branches to unite with the spinal accessory, glosso-pharyngeal, lingual, and sympathetic nerves. 2. Branches to assist in forming the pharyngeal plexus. 3. Superior laryngeal nerve, which sends a branch to the pharyngeal plexus—external branches to the sterno and thyro-hyoid muscles, thyroid gland, and cartilages of larynx, and an internal branch pierces the tyhro-hyoid membrane, and supplies the epiglottis and mucous membrane, and sends a long branch to the crico-thyroid muscle. 4. Cardiac branches, which join the cardiac nerves of the sympathetic. 5. Inferior laryngeal or recurrent nerve sends off cardiac filaments—branches to the forepart of the trachea and thyroid gland, and branches to the pharynx, laryngeal muscles, and mucous membrane, on which they communicate with branches of the superior laryngeal. 6. Pulmonary branches sends off branches which pass in front of the bronchial tubes to form the anterior or lesser pulmonic plexus, which plexus sends filaments to the pulmonary vessels, also to the lungs and pericardium, and to the posterior pulmonic plexus. 7. Posterior, or greater pulmonic plexus is formed by the vagi nerves which increase in size at the root of each lung, and subdivide and unite in an areolar manner. This plexus is joined by several branches of the sympathetic nerve, and its branches accompany the bronchial tubes through the substance of the lung. 8. œsophageal plexus or plexus gulæ, is formed by the communications of both nerves, encircling the œsophagus in their course along this tube. 9. Cardiac, or gastric plexus, is formed by both nerves dividing, subdividing, and

uniting upon the stomach. The left vagus nerve is anterior upon the stomach, and sends branches to the lesser omentum and liver; the right is posterior. *Nervus accessorius*, or third branch of the eighth. 1. Branches to communicate with the eighth, ninth, and sympathetic nerves. 2. Branches to the sterno-cleido-mastoid muscle, which muscle it then perforates. 3. Terminal branches to the trapezius muscle and skin.

Ninth pair, or lingual. 1. Descendeus noni receives a filament from the pneumogastric, unites with the internal descending branches of the cervical plexus, forming a small triangular plexus, the branches of which pass to the omo and sterno-hyoid and thyroid muscles. 2. Branches to the constrictors of the pharynx and thyro-hyoid muscle. 3. Branches to the hyo-glossus and surrounding muscles, and to the gustatory branch of the fifth pair. 4. Terminal branches to the geniohyo-glossus muscle.

The London Medical

AND

Surgical Journal.

Saturday, June 17th, 1837.

THE IRISH MEDICAL CHARITIES BILL.

In a late Number of this Journal we were the first to announce the alarm which was created among the Dublin monopolists, when it reached their deafened ears that it was the intention of Lord Morpeth to introduce a bill for the regulation and support of Public Charities for the Sick Poor of Ireland, and which was to be warmly supported by Mr. O'Connell and the liberal Irish members in the House of Commons. We were fully satisfied that the most strenuous opposition would have been given by the tory monopolizing junta of Irish members in defence of their College of Surgeons, and of their unjust and exclusive possession of the County Infirmaries; and though something was to be feared from the presence of the College Deputation in London, in the persons of Mr. Cusack Roney, Dr. Evanson, and Mr. Corr, men whose abilities, particularly the former, have been acknowledged to be pre-eminent in Collegiate intrigue, we confess we were totally unprepared for the Meeting of the Members and Licentiates of the Dublin Colleges of Physicians and Surgeons, held on Thursday last, a Report of which will be found in another part of this number. We certainly considered the proposed Bill open to some objections on account of its conciseness; but at the same time we felt convinced that a Liberal Government would protect, as far as possible, the interests of ALL branches of the profession in Ireland; and that whilst the objectionable clauses would have been omitted, or have undergone modifications in committee, other clauses would have been introduced so as to render it a safe and salutary enactment. Notwithstanding the many difficulties which the noble Secretary for Ireland has had to contend against in his endeavours to carry his laudable intentions, we do not fear any new difficulty to present itself to Lord Morpeth in the formidable array which took place at the late Dublin meeting, or in any statements which were made by the different speakers.

It scarcely required the eloquent tongue of Dr. John Crampton to inform the noble Secretary for Ireland, that the Inspectors "should be well educated persons, members of the profession, perfectly independent, and not biassed by party feeling;" much less that his talented and justly distinguished relation, the SURGEON GENERAL, should intimate that the duties of the Inspectors should be defined, or that a man was "lowered" by having an inspector placed over him: and though the Surgeon General, or an individual less eminent in his profession, might justly

complain of the interference of an inspector in the execution of his hospital duties; yet had Mr. Crampton made himself acquainted with the provisions of the Bill, he would have discovered that no such power was to be possessed by the inspectors; but we suppose he received his information from Surgeon Cusack, who has made the extraordinary discovery that "the section of the act for making the inspectors omnipotent over Medical Charities had actually passed," though the bill is not even as yet in committee! The suggestions offered by Dr. O'Beirne must strike every one as being most rational; and we entirely agree with him, that the Poor Law Commissioners are very incompetent to decide on medical matters.

No person could have been better selected than Surgeon Colles to propose the resolution in favour of continuing the *Monopoly* to the Infirmary surgeons, most of whom have been his own apprentices or pupils. He certainly spoke most *feelingly* upon the subject, and it only required his colleague at Steven's, of apprentice *fee* notoriety, Surgeon Cusack, to have seconded the motion, in order to make it fully intelligible to Lord Morpeth. The speech of Surgeon Carmichael accords with his wonted liberality and independence in favour of fairly remunerating the profession; and he gave numerous instances of the paltry remuneration given to those medical practitioners who were so actively engaged in the treatment of that formidable epidemic—the cholera, which struck such terror into all classes of the community. We have long entertained the opinion of Mr. Carmichael that "if the profession had co-operated for their mutual advantage, they never would have been treated by the government of the country in this manner."

This was, however, readily explained by the Surgeon-General, who had been informed by the government, that there was no necessity of allowing any remuneration while so "many surgeons offered to undertake the duties gratuitously."

The resolution of Dr. Kirby, as to the regulation of education, is at variance with the opinion of the government, and is premature, until Mr. Warburton's bill on that subject, is brought before Parliament.

THE KING'S HEALTH.

(From our Windsor Correspondent.)

The intense interest which has been excited throughout the kingdom relative to the health of the Sovereign, has made me anxious to collect, from day to day, every possible information from such quarters on which implicit reliance could be placed; and there are many circumstances which cannot fail to interest, though they have either been purposely omitted, or distorted for political purposes by the daily press. I formerly stated that though the mucous expectoration had diminished, his Majesty was still afflicted with severe dyspnœa on the slightest movement, which appearances have since continued, and, I regret to add, along with occasional *homoptœ*. Much alarm has been created by these formidable symptoms being combined with a great disturbance in the circulation, the pulse at the wrist being sometimes not even recognizable, and at other times reduced in frequency to a very remarkable degree, leaving no doubt not only of the mucous membrane of the lungs having severely suffered from congestion, but also that a valvular disease exists, the lining membrane of the left side of the heart being in a state of subacute inflammation.

The public have expressed much dissatisfaction in the few bulletins which

have appeared on this lamentable occasion, but they ought to be aware that such documents have been on all former occasions, and probably will ever be, intended not for the purpose of giving any precise account of the malady of the King, but are chiefly concocted to mislead and conceal the real condition of Royal sufferers; and much praise is justly due to the distingushed President of the Royal College of Physicians, for the great skill and consummate knowledge of court etiquette, which he has acquired during a very long experience, by which he has infused into the bulletins that simplicity so universally acknowledged. Besides the names of the celebrated Halford, and renowned Chambers, you will observe that there is appended to two of the bulletins, that also of Sir Matthew Tierney to adorn the composition, and in order to make it still more imposing you have also that of Dr. Davis, our old friend from Kensington.

It has been amusing to us here, who have been long behind the Court scenery, to read the puffings of *Doctor* Davis, who gets the credit of puffing himself, and many of your readers may be curious to know the history of this far-famed and favourite physician of his Majesty, as he is officially announced in the Court Circular. The *Doctor*, when I first knew him, kept a most respectable but very small druggist's shop in Kensington, and his success was such in the "the drug trade that' he repaired to Bushey, where he became an Apothecary of great eminence, and was soon employed to attend the household of the Duke of Clarence. On King William's accession to the throne, the *Doctor* was appointed Apothecary and Medical Attendant in general to his Majesty's household, and his reputation was such, and his professional talents so highly esteemed by the Court, that a few months since, he received the distinguished honour of procuring a medical degree from the Archbishop of Canterbury—that most Reverend Prelate, never having exerted his privilege of granting degrees in medicine, unless on the most important occasions; for I am not aware that any individuals, except Sir Charles Clarke and our Great Court Physician, Dr. Davis, can in our days, claim the high distinction of possessing degrees of such divine origin.

Though no notice has been taken of the professional attendance of Mr. Keate at the Palace, yet I am happy to say, that his Majesty has had all the advantages of his able advice, which, along with the undoubted skill of Dr. Chambers, the King may be said to have had the benefit of the concentrated wisdom of the Solomons of St. George's Hospital. The appointment of Mr. Keate at this moment as an extra Serjeant-Surgeon-in-ordinary, or some such appellation, gives great satisfaction here, and must give general satisfaction to the profession, when it is recollected how shamefully he was excluded from the Court on a former occasion by the nefarious and no less contemptible conduct of certain individuals, who, under the mask of friendship, were base enough to betray his interests. It is but justice to his Majesty, however, to state, that on many occasions he took an opportunity of expressing his deep regret, that he should have been too hastily, and from false representations, induced to neglect Mr. Keate's undoubted claims; so that the precarious condition in which the King's health now is, renders this act of his Majesty, highly honourable to the King's sense of Justice, and cannot failt be equally gratifying to Mr. Keate.

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HOSPITAL FEES SYSTEM.

We have much pleasure in stating that our former account of the intentions of the Gower-street Liberals is confirmed, and that the fee for attendance at the North London Hospital they have finally determined to increase, so as to bring themselves upon a perfect equality with the Old Hospital Cormorants.

MEETING OF THE COLLEGES OF PHYSICIANS AND SURGEONS.

On Thursday last, at four o'clock, a very numerous general meeting of the Fellows, Members, and Licentiates of the Colleges of Physicians and Surgeons, was held at Morrisson's Hotel, "for the purpose of considering the provisions of a bill, now in progress through Parliament, for the better regulation of Hospitals, Dispensaries, and other Medical Charities in Ireland." Dr. Marsh was called to the chair.

Dr. Jacob proposed the first resolution, which was to the effect,—"That it was the opinion of the meeting, that a legislative enactment to provide for the support of Medical Charities in Ireland, and procure the application of the funds to their legitimate objects, was desirable."

Doctor William Stoker rose to propose an amendment to the resolution, upon the ground that some regulations were necessary for the improvement of abuses.

Dr. Collins suggested that more time should be allowed for the consideration of the resolutions.

Dr. Lendrick concurred in opinion with the gentleman who preceded him.

Dr. O'Beirne observed that probably the gentlemen present were not aware that the bill now before Parliament would be read upon the 15th; and, therefore, unless they took immediate steps they would not be able to place the necessary materials in the hands of the Ministers of the crown. (Hear, hear.)

Dr. Brady considered that the gentlemen who were averse to the adjournment had no cause for apprehension, upon the ground of not being in time before legislation, when they took into account the slow rate at which modern legislature was carried on.

After a long discussion, the Chairman put the amendment of Dr. Collins, which was rejected, and the proceedings were resumed.

The Chairman then put the first resolution to the meeting, and it passed unanimously.

Doctor John Crampton proposed the second resolution, which was to the effect,—"That the establishment of a Board of Inspectors, if composed of well educated, independent, and experienced members of the profession, was calculated to render the charities of Ireland more valuable, and improve the situation of the medical attendants by defining their duties and securing them adequate remuneration." It was necessary that the inspectors should be well educated persons, of course taking it for granted that they were members of the profession. They should all possess the necessary qualifications entitling them to fill the situations; they should be independent, not biassed by any party feeling, or dependent upon the smiles or frowns of a great man in any part of the country. They should be perfectly independent. The establishment of such a board would render the situations of medical attendants throughout the country much more comfortable than at present, not that he wished to throw any imputation upon them, for he believed them to be a well-educated and a hard-working class of men.

The Surgeon-General considered that the duties of inspectors should be more intelligibly and fully defied. Nothing could be less advantageous to the paofession than having inspectors appointed with such duties as the resolution set forth were to be performed by them. Was anything more calculated to lower a medical man than to have an inspector over him? (Hear, hear.) He entirely objected to the practice and principle of inspectors interfering in the least with the treatment and management of a patient who was under the care of a medical practitioner. (Hear, hear.)

Dr. O'Beirne begged to say a few words in reference to the establishment of the Board of Inspectors. The intended constitution of the board was four inspectors —all of them men invested with equal powers—there was neither a head nor a tail to it. He wished to point out a case to show the injury which the board might inflict upon the gentlemen connected with the medical institutions of Ireland. Take the case of an inspector visiting an hospital, and making unfavourable reports of it, and probably unjust recommendations. To whom were the medical officers to ap-

peal? Was it from one inspector to another; or should the case be referred to the case of the superintendent? The Poor Law Commissioners were to possess the control of those inspectors, and those Commissioners were, indeed, very incompetent to decide upon matters which were purely medical.

The Surgeon-General objected to the omission of not specifying and defining the duties of the inspector. For his part he would not act as a medical attendant in any hospital if he were to be interfered with by an inspector.

Surgeon Cusack observed that the section of the act making the inspectors omnipotent over Medical Charities had actually passed.

The Chairman then put the resolution, which was carried with only a few dissentient voices.

The Surgeon-General proposed the third resolution, which was to the effect, that the power to be entrusted to the inspectors was so vague and indefinite, and so liable to misconstruction and arbitrary exercise, that the meeting protested against it.

Dr. W. Stokes seconded the resolution.

Surgeon Colles proposed the fourth resolution, which was in substance as follows:—"That the meeting observed with surprise and regret, that the laws securing payment to the medical attendants of infirmaries, fever hospitals and dispensasies, are about to be repealed without remuneration, and even the 100*l.* a year paid for nearly seventy years to each of the surgeons of the county infirmaries was withdrawn, and applied to the payment of the board of inspectors, which was exceedingly unjust, for those gentlemen were persons of considerable experience and ability." He would observe that it was extremely likely, nay, almost certain, that the enactment, as stated, did not intend to have a retropective but a prospective tendency, but upon trying to construe the act in that manner, he found it was impossible to give it any other interpretation but this, that the money was to be drawn from the practitioner, and applied to the payment of inspectors (hear, hear). It would be all very just and proper, if the present gentlemen were left undisturbed, to apply the money to the purposes of the board, instead of appointing successors to those gentlemen, but he could not conceive anything more unjust than to withdraw men from their situations who spent years in active service for the good of society. (Hear, hear.) When they looked to the county infirmaries throughout Ireland, they saw that they were filled by men of the highest education and attainments, who were driven to accept situations in them, because they had not the means of holding out competition in any of the large towns; in fact, they had men of the first qualifications, who, if they were given only a fair field for labour, would be ornaments to the country and the profession. (Hear.) It was unjust to deprive those indefatigable men—many of whom had grown old in the profession, of the salaries which originally induced them to enter upon that profession. He could hardly think it possible that any lsgislature, wiih its eyes open, could introduce such a clause. (Hear.)

The Chairman then put the resolution, which passed.

Surgeon Carmichael proposed the fifth resolution, which was to the effect,—"That ample security to remunerate medical officers should be required as an act of public justice, and a necessary security for the members of the profession, and a faithful discharge of their duties towards the poor entrusted to their care." He felt that medical men were worse rewarded for the public duties they had to perform than any body of men in the community. (Hear.) In fact, it appeared to him that government, upon all occasions, evinced the greatest disparagement and even contempt towards medical men, and he congratulated the profession upon the meeting they held that day, which he hoped would be the *nucleus* around which mediacl men might combine and protect themselves in future. As instances of his assertion that government disregarded their interests, he would mention the attempt to introduce the Grend Jury Bill of last session, which was withdrawn solely in consequence of the co-operation and combination of medical men, who objected to its provisions. (Hear, hear, hear.) They also saw what attempts were made to disparage medical men, by the extinction of every office of honour or emolument attached to the profession; for instance, the situation of Surgeon and Physician-general; that of State Surgeon and Physician, and even the paltry salaries which the Surgeons of the House of Industry had always enjoyed were withdrawn. (Hear, hear.) If the professions had co-operated for their mutual advantage, they never would have been treated by the government of the country in this manner. (Hear, hear, hear.) We should

also recollect another instance. At the time the cholera raged, a number of medical men were sent from Dublin to attend to the afflicted. At the very same period a number of young lawyers were employed to forward the registries. The former, for immense labour and imminent risk of life, had from one to two pounds a-day doled out to them by the government; while the latter, for their comparatively trifling occupation, enjoyed the handsome payment of five guineas per day. (Hear, hear, hear.) Are medical men of an inferior rank of life, or are they worse than, lawyers? (Hear.) No, but they have no *esprit de corps* to preserve them from degradation, and instead of combining for their mutual support, they are eternally undermining and underselling each other. (Hear.) He, however, hailed the appointment of medical inspectors because he considered that the profession would thus be brought into closer contact with the government. (Hear.) He trusted, however, that they would be well paid, for no man of ability and education would undertake the office unless he was well paid. If uneducated and inexperienced persons, who would be satisfied with trifling incomes, were appointed, the system of inspection wou'd be more a bane than a boon to the profession and the country. (Hear.)

Dr. Montgomery seconded the resolution.

The Surgeon-General said, he wished to answer the inquiry, iu some degree, why medical men were undervalued by the government? When the question of taking the salaries from the officers of the House of Industry was first discussed, he was spoken to upon the subject by the Chief Secretary of the day, and every argument which he (the Surgeon-General) could use to impress upon him the monstrous injustice of forcing medical men to perform such duties, and then leave them to find a reward for their exertions solely in the consciousness of having discharged their duties was resorted to by him. (Hear, hear, hear.) But the answer given to him by the Chief Secretary, indeed by every Chief Secretary, was, that there was upon his table bundles of letters from members of his (the Surgeon-General's) own profession, offering to undertake the duties gratuitously. (Shame, shame.) He (the Surgeon-General) read these letters; of course it would not be proper for him to mention any names. Another answer to every argument in favour of the profession was, that in England no remuneration for such services was required, and Guy's and Bartholomew's Hospitals were instanced in confirmation of the assertion. To be sure there was to this objection a very satisfactory answer—namely, that there were schools attached to the hospitals cited, which produced from £1,500 to £2,000 per annum, and a physician or surgeon could very well afford to attend them gratuitously, when such emoluments were to be procured from the schools; but in Ireland the case was quite different. (Hear, hear.)

Surgeon Carmichael observed, that if there were a regular central board, an opportunity would be afforded the profession, as in the case of the bar, to expose any violation of their laws (hear, hear.)

Dr. Kirby proposed the sixth resolution—namely, "That every well educated member of the college of physicians was eligible to be appointed to an infirmary, hospital, or dispensary, but it was necessary that a clause should be introduced defining the period of his education, and the nature and extent of his qualifications, and that unless such clause was introduced, or a bill containing such a provison was brought forward, any alteration in the present law protecting the poor mnst be considered premature, impolitic, and unjust."

After some discussion, the Chairman put the resolution, which was adopted.

Surgeon Colles was then called to the chair, and the usual vote of thanks having been passed to Dr. Marsh, the meeting separated.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

May 23, 1837.—Dr. Bright, President.

Nervous affections peculiar to young women, causing contraction of the muscles of the extremities, accompanied by increase, diminution, or absence, of sensation, or motion.

Dr. John Wilson, physician to the Middlesex Hospital, in a paper under the above title, read this evening, briefly details the circumstances of ten cases of nervous affections occurring in his practice at the hospital, the subjects of which were all young women, and, with one exception, single. The symptoms in these cases varied exceedingly; in some, simulating disease of the hip and spine, occasionally attended with common hyste-

rical features, occasionally with paralysis of one or other of the limbs, hemiplegia, rigid muscular contractions, and other evidence of extreme nervous affections; generally, but not invariably, the uterine functions were disordered, and the bowels were usually constipated. The treatment consisted in the administration of purgatives by the stomach, as well as in enemata; in the use of acupuncture, the cold shower and douche-baths, large doses of carbonate of iron, and other local and general means, which succeeded, usually in a very short time, in giving entire relief to these distressing affections. The remedy, however, which was productive of the most decided advantage, was forcible extension of the contracted limbs, by obliging the patients to stand unassisted by the sound limbs, and causing them to walk, with assistance, about the ward. These means the author found it often very difficult to enforce, owing to the objections of the patients, and the sympathies excited in the nurses and other beholders, by the apparent severity of the treatment The author satisfies himself with relating the cases briefly to the Society, leaving it to others to form their own conclusions from them.

Dr. Bright said, that the cases related by the author of the paper were interesting, and advanced some new plans of treating hysterical affections of a severe character which were worthy of the consideration of the Society. How far were the needles beneficial in the instances in which they were employed? He had seen a case in which recovery took place without their application. A young woman had been seized suddenly with loss of sensation and motion in her right hand, as far up as the wrist joint. She was in the habit of getting up in the day-time to sit by tne fire. One day she was seized with paralysis of the right leg, and could not get to bed without assistance. She gradually recovered the use of her right hand, and, subsequently, of her leg, the only remedial means employed likely to produce such a result being the application of a few blisters to the spine.

Dr. Johnson said, that the cases of Dr. Wilson proved that hysterical affections, particularly in young women, might simulate organic disease occurring in every part, from the head to the foot, even taking on the character of white swelling, loss of vision, &c. He thought the author had acted wisely in advancing no theory on the subject; the idea of the uterus wandering from one part of the body to another, was a good as any that had been adduced. There were two points of importance respecting these affections; one was, how to distinguish them from real organic diseases; and secondly, how to treat them best. They were, no doubt, frequently treated erroneously by young practitioners, who supposed that they were organic diseases, and proceeded accordingly, with very active remedies. The patients might get well, and it was thought organic disease had been cured. In determining the nature of the disease, he (Dr. J.) only knew two diagnostic marks of the occasional presence of hysterical symptoms, and the health not being affected to the degree generally found in organic disease; the vital functions going on very naturally during the presence of the most formidable symptoms. Respecting the treatment, it had been powerful in these cases, and, indeed, was often so, various remedies being employed without effect, till time cured the affection, the last remedy employed getting all the credit. Solitary confinement in a black hole was a more effectual means of treatment than any other. Time, he thought, the only remedy in these affections.

Dr. Weatherhead could not agree with the last observation. Many remedies were of great value in hysteria, particularly assafœtida, carminative tinctures, and aromatic bitters, these relieving the flatulencs of the stomach and bowels, to which hysterical patients were subject to a distressing extent. He could not understand why some practitioners employed such large doses of carbonate of iron in these affections, for that medicine being insoluble, could not act until it had been decomposed in the stomach or bowels. The muriatic or acetic acid, were the only two present to effect this change. Would it not be more direct to administer the muriated tincture, or the acetate of iron? The only reason he could see for using the carbonate was the fact of its lodging in the bowels, and becoming gradually decomposed, and so exerting its efficacy.

Dr. Webster thought that aloetic purgatives, combined with steel, were very usefnl. He considered a little severity to be beneficial; the cold douche was also a valuable remedy.

Dr. Moore thought, from the sympathy which existed between the cerebellum and the uterus, that hysterical symptoms would generally be relieved by cupping, and the application of cold to the former.

Mr. B. Phillips related the following

remarkable case, shewing the inefficacy of all kinds of remedies, in some instances:—A young woman, aged 20, was in good health, when she received a very slight injury, to which her subsequent illness was referred. One day, whilst ironing, she struck herself an inconsiderable blow at the lower end of the radius, just were the radial nerve passes along. The contusion was very slight, but the part swelled, and she complained of very acute pain; which gradually getting worse for the space of a fortnight, he (Mr. P.) was requested to see her. He found little appearance of the injury on the part, but there was much tenderness, which increased on pressure. He ordered leeches to be applied. Two days afterwards there was a little spasm of the surrounding muscles, and incipient contraction of the fingers, which proceeded gradually to the most perfect contraction. She suffered from excrutiating pain, which advanced towards the head; cupping and blisters were applied to the back of the head without effect. The contraction extended from the fingers to the wrist-joint, and subsequently to the elbow; in the space of three weeks from the time he first saw her, the vision of the left eye became first imperfect, and was afterwards entirely lost. She suffered great pain, and had severe spasmodic action of the muscles, occurring in paroxysms fifteen or twenty times a day, and always proceeding from the injured point. During all this time her bowels were open and her catamenia regular. Counter-irritation applied to the back of the head afforded her no relief; large doses of tincture of opium and hyhrocyanic acid were of no benefit; and she went on in this way for three or four months. At a consultation of several physicians and surgeons at the end of this period, various plans of treatment were suggested—excision of a portion of the radial nerve, amputation of the radius, &c. One of the physicians recommended cobwebs to be taken; these were used for a week, and sulphate of iron for three or four weeks afterwards, without any effect. At the last consultation it was determined to leave the case to itself; the health was still unimpaired. At the end of three weeks, having been living on good diet, the patient was better, and, in twelve or thirteen weeks, quite well.

Dr. J. Johnson said, that when he spoke of the inutility of medicine in hysteria, it was the anomalous and puzzling forms of the affection, like the last that was related, common hysteria, many remedies were efficacious.

Mr. Arnott said that the diagnosis in cases of hysteria simulating diseases of the joints was often very difficult to form, particularly in cases where the symptoms followed a slight injnry. He thought the general appearance of the patient, and the continuance of good health, a good diagnostic mark. There was, also, seldom much swelling; he had never seen anything like a "white swelling," the tumefaction being always much more limited than in that disease. In cases where the knee-joint was affected from hysteria, the patient complained of pain on motion, and when the ends of the bones were rubbed together, but then the slightest touch of the skin, before the deeper-seated parts were at all pressed upon, produced great pain. The surface, too, was seldom preternaturally hot. Hysterical symptoms were not always present, and the great point was to wait. He had seen a case occurring in the ankle, in which there was pain, and inability to move the joint. In this instance there was pain in the left side, a frequent symptom in hysteria. In hysterical affections of the hip-joint, the limb, though apparently shortened, was not really so, which would be ascertained on a careful and accurate admeasurement. If the patient's mind was kept engaged for the time, pushing the head of the bone against the upper part of the joint produced no pain. Moral treatment was of great effect in hysterical cases. He agreed as to the efficacy of Dr. Wilson's treatment. In the case of the ankle-joint he (Mr. A.) had alluded to, the use of the needles did good. He had seen the cold douche effectual in cases of contraction attended with great pain. In one case in which tetanic spasms attacked the limb, and in which two and three grain doses of morphia were given without benefit, the cold douche immediately relieved both pain and spasm.

The President, on retiring, said, that in the ordinary course of things, this was the last meeting of the Session; but in consequence of several valuable papers being still unread, an extraordinary meeting would take place on Tuesday, the 13th of June. He again mentioued the dilatoriness of members in forwarding their communications, which caused much inconvenience.

MEDICAL CHARITIES.
(IRELAND.)

(Concluded from page 314.*)*

And be it enacted, That it shall and may be lawful to and for all bodies politic and corporate, trustees, guardians of infants, committees of lunatics, femes covert, with their husbands, and all other persons whatsoever who are or shall be seized or possessed of or interested in or entitled to any estate or interest whatsoever in the lands, houses, grounds, tenements, buildings or hereditaments, which by the said Medical Inspectors shall be thought necessary to be rented or purchased for any of the purposes of this Act, by deeds indented and enrolled, to demise, sell and convey all and any such grounds, houses, tenements, or hereditaments, or any part thereof, and all the respective estates and interest therein, to the said Inspectors, or any *Two* of them, and their heirs and successors, and that all contracts, agreements, bargains, sales and conveyances that shall be so made, shall be good and valid in law to all intents and purposes whatsoever; and that such Medical Inspectors for the time being, and their heirs and successors, shall be trustees of all such houses, lands, tenements and hereditaments, as shall be conveyed to, or vested in, them, under and by virtue of this Act, for the purposes herein provided, and for no other purpose whatever.

And be it enacted, That all and every of the provisions of an Act passed in the fiftieth year of the reign of King George the Third, intituled, "An Act for repealing the several Laws relating to Prisons in Ireland, and for re-enacting such of the Provisions thereof as have been found useful, with Amendments;" or any Act for amending the same, which affect or relate to the purchase, holding a court and valuation of lands, tenements or hereditaments, for the sites of gaols or prisons, or to any notices, proceedings, summonses, verdicts and judgments, or to any conveyances or enrolments, or to the lodgments of consideration-money, or to peritions to the High Court of Chancery in Ireland, or to any payments of purchase-money, or to any rights and titles of parties interested, shall be held to apply to the valuation of lands, tenements or hereditaments rented or taken for the purchase of land under the provisions of this Act, and such verdicts, judgments and conveyances shall be binding and conclusive to all intents and purposes whatsoever, and that all the powers vested in the Commissioners by said Act, or of any Act for amending the same, shall be and are hereby vested In the said Medical Inspectors, or any *Two* of them, for the purpose of the valuation of all lands, tenements and hereditaments, for the purposes of this Act.

And be it enacted, That from and after the *passing of this Act* it shall and may be lawful to and for every Archbishop, Bishop, Dean, Dean and Chapter, Archdeacon, Dignitary or Prebendary, to grant, by his or their deed or deeds respectively, any piece or parcel of land, not exceeding *Six* Acres plantation measure, as and for the site of a Hospital, Asylum or Dispensary, in such and the like manner as such Archbishop, Bishop, Dean, Dean and Chapter, Archdeacon, Dignitary or Prebendary, is empowered to do with respect to land for the site of a church and churchyard, in and by an Act passed in the Parliament of Ireland in the thirty-third year of the reign of King George the Second, among other things to encourage the building of new churches: Provided always, That such grant shall and may be made either to the churchwardens of the parish in which said land shall be situate, and their successors for ever, according to the directions of the said Act of the thirty-third year of King George the Second, or to the said Medical Inspectors, as the Lord Lieutenant or other Chief Governor or Governors of Ireland shall order and direct; and such grant shall be good and effectual against such Archbishop, Bishop, Dean, Dean and Chapter, Archdeacon, Dignitary or Prebendary, and his and their successor and successors; and the churchwardens of such parish and their successors for ever, or such Inspectors as aforesaid, and their heirs and successors, shall be and are hereby empowered and made capable of receiving and enjoying the benefit of any such grant, for the purpose aforesaid, in like manner as by the said Acts, or either of them, is provided with respect to any land granted for the site of a church and churchyard or lunatic asylum respectively.

And be it enacted, That it shall and may be lawful for any body corporate or collegiate, civil or ecclesiastical, aggregate or sole, to demise or lease any lands within the kingdom of Ireland to the Governors, Trustees or other proper officers of any Public Hospital or Hospitals within the said kingdom, for the use of such Hospital or Hospitals, or for form-

ing a Cemetery to belong thereto, for any term of years, or for life or lives certain, or lives renewable, at the best yearly rent that can then be obtained for the same, and subject to such covenants, conditions, and provisons as shall be agreed upon between the said lessors and lessees; and in every such lease there shall be a reserved power of re-entry on non-payment of the rent reserved within a reasonable time after the same shall become due and payable; and every such lease shall be good, valid and effectual against every person having or claiming to have any charge or incumbrance affecting either in law or equity the fonds or premises comprised therein: Provided always, That no such lease shall demise a greater quantity than *Thirty* Acres, and that no fine shall be taken or received for making any such lease or demise, or on any renewal thereof.

And be it enacted, That it shall and may be lawful for the said Lord High Treasurer or Commissioners of His Majesty's Treasury to order and direct that any sum or sums of money shall be advanced and issued and paid out of the growing produce of the said Consolidated Fund to such person or persons as shall be named in any such order, or into the Bank of Ireland in the names of any such person or persons, to be paid and applied for the purpose of erecting and establishing any such Institution for the poor in any such district in Ireland, in such sums and at such times, and in such manner and proportions, and under such rules, regulations, terms and conditions, and to annex such penalties for breach of such rules, regulations, terms and conditions, as to the Lord Lieutenant or other Chief Governor and Governors of Ireland shall seem best suited for promoting the beneficial purposes of this Act.

And be it enacted, That it shall be lawful for the Grand Jury of any and every county, county of a city, or county of a town in Ireland, in or for which, either wholly or in part, any such Institution hath been or shall be erected; and such Grand Jury are hereby required, at the assizes next after the date of any such order for the advance of money for the erecting, opening, carrying on or maintaining any such Institution, or as soon after as they shall be thereto required, and from time to time, whenever the case shall happen, to make presentment for the raising off any such county, county of a city, or county of a town, and without the same having been previously submitted to the special sessions, such sum or sums of money as shall be necessary for the repayment of any such sum or sums of money so advanced, or any part thereof, at such times and in such proportions as shall be directed and ascertained by any order or orders to be made by the Lord Lieutenant, or other Chief Governor or Governors of Ireland: Provided always, that all houses and buildings adjoining to any city or town in Ireland, and considered as part of such city or town, shall be liable to be assessed for such presentments under the provisions of this Act, as if such houses or buildings were within such city or town, notwithstanding any local or other Act to the contrary.

And be it enacted, That if any such Grand Jury shall neglect or refuse to make any such presentment, the Judge of Assize shall and may and is hereby required to order the sum or sums which ought to be so presented to be raised as if the same had been so presented, and the same shall be raised and paid accordingly: Provided always, That the Certificate of the Chief Secretary or Under Secretary for Ireland shall be sufficient evidence of the advance of money and order of the Lord Lieutenant or other Chief Governor or Governors of Ireland upon which the several Grand Juries and Judges of Assizes shall make such presentment.

And be it enacted, That whenever a Poor Rate is established in Ireland under the provisions of any Act to be passed for the relief of the destitute Poor in Ireland, and in course of collection throughout Ireland, the sums to be advanced by order of the Lord Lieutenant or other Chief Governor or Governors of Ireland as aforesaid shall be paid out of such Poor Rate, and that from thenceforth the power of Grand Juries to present for same shall cease and determine.

And be it enacted, That the sum paid annually to the Treasurer of the Hospitals and Infirmarys out of the Consolidated Fund in Ireland, under the provisions of an Act passed in the fifth and sixth years of the reign of King George the Third, intituled, "An Act for erecting and establishing Public Infirmaries or Hospitals in this Kingdom." shall in future be paid and applied towards the salary and expenses of the Medical Inspectors and Medical Charity office in Ireland.

And be it further enacted, That all fines and penalties imposed by any Act now in force in Ireland, or any fines or penalties imposed upon any person by any Court of Justice in Ireland, shall be ap-

plied to the benefit of the Infirmary of the county, county of a city or town in which the offence for which such fine or penalty has been inflicted shall have been committed.

And be it enacted, That this Act may be altered, amended or repealed in this present Session of Parliament.

ACCOUNT OF A MAN WHO WAS BURIED ALIVE FOR A MONTH, AND THEN EXHUMED ALIVE.

By H. M. Twedell, Esq., *Bancoorah, East Indies.*

The improbability of an act is not to be taken as conclusive against its possibility. There seems to be no bounds to man's ingenuity, or artifice. Circumstances which appear unaccountable to the wise men of the present day, may be familiar to forthcoming philosophers of the twentieth century. The exploits of the salamander lady, of the fire king, of the woman who supported a huge anvil on her chest, of those who in their mouth hold molton lead, and wholesale digesters of poisons, may appear as bagatelles in comparison with the accomplishments of our posterity. Even the account furnished in this paper may be only interesting to future philosophers as the first of a series, showing, that air, food, and water, are not entirely necessary to sustain existence, and that a man may betake himself to the grave, and pass away a month, comfortably, if assured that a shovel will be exerted to release him at the appointed hour.

The facts detailed in this account were communicated to me, within these few days, by Lieut. A. H. Boileau, of the Engineers, first assistant Great Trigonometrical survey, who at that time was employed in the survey of that part of the country. For the sake of accuracy, he consented to my taking a copy of a letter written by him to his family on the day that the buried man was resuscitated. That letter I here have permission to publish :—

"I have just witnessed a singular circumstance, of which I had heard during our stay at this place, but said nothing about before, the time for its accomplishment not being completed : this morning, however, a man who had been buried a month, on the bank of a tank, near our camp, was dug out alive, in the presence of Esur Lal, one of the ministers of the Muharáwul of Jaisulmer, on whose account this singular individual voluntarily was interred a month ago. He is a youngish man, about thirty years of age, and his native village is within five kos of Keruaul; but he generally travels about the country to Ajmeer, Kotah, Endor, &c., and allows himself to be buried for weeks, or months, by any person who will pay him handsomely for the same. In the present instance, the Ráwul put this singular body in requisition, under the hope of obtaining an heir to his throne, and whether the remedy is efficacious or not, it deserves to be known. The man is said, by long practice, to have acquired the art of holding his breath by shutting the mouth, and stopping the interior opening of the nostrils with his tongue; he also abstains from solid food for some days previous to his interment, so that he may not be inconvenienced by the contents of his stomach, while put up in his narrow grave; and he is sewn up in a bag of cloth, and the cell is lined with masonary, and floored with cloth, that the white ants and other insects may not molest him. He was buried at Jaisulmer, in a small building about twelve feet by eight, built of stone; in the floor was a hole three feet long, two and a half feet wide, and perhaps a yard deep, in which he was placed, in a sitting posture, sewed up in his shroud, with his feet (or legs) turned inwards towards the stomach, and his hands also pointed inwards towards the chest. Two heavy slabs of stone, six feet long, several inches thick, and broad enough to cover the mouth of the grve, so that he could not escape, where then placed over him, and I believe a little earth was plastered over the whole, so as to make the surface of the grave smooth and compact. The door of the house was also built up, and people were placed outside that no tricks might be played. At the expiration of a full month, that is to say, this morning, the walling up of the door was broken, and the buried man dug out of the grave, the moonshee belonging to Captain Trevelyan, of the Bombay Artillery, only getting there in time to see the ripping open of the bag in which the man had been enclosed. He was perfectly senseless, his eyes were closed, his hands cramped and powerless; his stomach shrunk very much; and his teeth jammed so fast together, that they were forced to open his mouth with an iron instrument, to ponr a little water down

his throat. He gradually recovered his senses, and the use of his limbs, and when we went to see him, was sitting up, supported by two men, and conversed with a low, gentle tone of voice, saying, "that we might bury him again for a twelvemonth if we pleased." He told Major Spiers, at Ajmeer, of his powers, but was laughed at as an impostor; but Cornet (now Lieut.) Macnaghten, of the 5th regt. Light Cavalry, assistant to the agent to the Governor-Gen. ing Ragpootanah, put his abstinence to the test at Pokhur, by suspending him for thirteen days, shut up in a wooden chest, which, he says, is better than being buried underground, because the box, when hung from the ceiling, is open to inspection, on all sides, and the white ants, &c. can be easier prevented from getting at his body, while he thus remains insensible. His powers of abstinence must be wonderful; nor does his hair grow during the time he remains buried. I really believe that there is no imposture in the case, and that the whole proceeding is actually conducted in the way mentioned above."

Lieut. Boileau was unacqnainted with the man's name or caste; he told me that he believed he had taken up the life of a Fakeer. He understood that the man had been buried six or seven times, but whether for any period longer than a month, he knew not; he did not hear how the man discovered his powers, or when he commenced to practice them. Lieut. Boileau arrived at Jaisulmer, after the interment, and saw the place described in his letter, in which the man was buried. There was a guard of four or five Chuprases, in the employ of Maharáwul, as he understood, who were on the watch to prevent any interference or imposition. The process of burying and of disinterring was conducted in the presence of Esur Lall, one of the ministers of muharáwul. The day fixed for the disinterment was known to Lieut. Boileau. Captain Trevelyan's moonshee, who had set forth to give intelligence when operations were to be commenced, arrived only in time to see the people ripping open the cloth, or shroud, in which he had been enclosed. The moonshee immediately started off a man to inform his master, and Lieut. Boileau, who were in their tents, at a distance of about three furlongs.

They repaired to the spot as quickly as possible. Perhaps a quarter of an hour had elapsed, since the opening of the grave, before they arrived. The people had thrown a clean cloth over the man; two of them supported him; he presented an appearance of extreme emaciation and debility; but weak as he was, his spirit was good, and his confidence in his powers unabated. Lieut. Boileau examined, and measured with his walking-stick, the grave in the floor, and also the two slabs of stone which had covered its mouth. For seven days preceding the burial the man lived entirely upon milk, regulating the quantity so as to sustain life, whilst nothing remained to give employment to the excretory organs. In that state he was buried. He had great dread of the white ants. Several folds of cloth were spread on the bottom of the grave, to protect him from their attacks. On taking nourishment after his release, he is said to be in a state of anxiety, until he has ascertained that the powers of his stomach and intestines are not impaired. Lieut. Boileau saw nothing more of the man; he understood that he regained his strength, and was for some time in attendance at the durbar of the Maharáwul, in the hope of receiving his promised reward, and that, tired of waiting until the purse-strings of his patron were loosened, he had stolen a camel and decamped.

The following passages occurs in "Notices of Brazil in 1828-29," by the Rev. R. Walsh, LL.D., in speaking of the foreign slave trade:—"The wretched slaves often inflict death upon themselves in an extraordinary manner. They bury their tongues in the throat in such a way as to produce suffocation. A friend of mine was passing when a slave was tied up and flogged; after a few lashes he hung his head, appearing lifeless; and when taken down, was actually dead; his tongue was found wedged in the œsophagus, so as completely to close the trachea. The slave who by this action of his tongue provokes death, hitherto has been supposed to be dead, and in many instances perhaps without any examination at all, his body has been consigned to the grave."

There is a case published by Dr. Cheyne, of a man who had the power of suspending his animal functions, and who performed the experiment *once too often*.

It may be supposed that the public notice of the extraordinary powers of this man will attract the attention of phosiologists in both hemispheres

All communications and works for review to be forwarded, (carriage paid) to Dr. Ryan, 4, Charlotte-street, Bloomsbury-square.

THE

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXVII.

ETIOLOGY.

Proximate Causes of Disease—Depositions of Preternatural Tissues—Calculi—Vesical, Renal, Bronchial, Salivary, Biliary, Bursal, and Intestinal Calculi—Bezoards—Cholesterine—Black Calculi—Combustible and Incombustible Calculi—Animal and Mineral Calculi—Uric Acid—Purpurate of Ammonia—Alternating Calculus—Lithate of Ammonia—Phosphate of Lime—Children's Calculus—Phosphate of Ammonia and Magnesia—Fusible Calculus—Oxalate of Lime—Mulberry Calculus—Hemp Seed Calculus—Primary Calculi—Carbonate of Lime—Silica—Cystic Oxide—Wollaston's Calculus—Xanthic Oxide—Marcet's Calculus—Fibrinous Calculus—Urate of Soda—Urate of Lime—Soluble and Insoluble Calculi—Gouty Calculi—Depositions of Natural Fluids in Excess—Perspirable, Follicular, and Glandular Secretions—Catarrhal Mucus—Saliva in Hydrophobia—Pyrosis—Ptyalism of the Pancreas—Difference between Hepatitis and Cholera, and between Nephritis and Diabetes—Asthmatic, Diabetic, and Hysterical Urine—Gouty, Rheumatic, Catarrhal, Febrile, and Hectic Urine—Heavy and Light Urine—Depositions of Preternatural Fluids—Dropsy—Active and Passive Dropsy—Dropsy always Inflammatory—Dropsy always from increased Deposition, and never from Diminished Absorption, or from Debility—Hydrocephalus—Rachitis—Inflammation of the Bones in Rickets—Boyer, Beclard, and Howship—Varicose Ulcer—Blackall, Hare, and Carmichael Smyth on Dropsy—Dropsy not an Exsudation, but a Secretion—True Nature of Vesicles and Bullæ—Hæmorrhage—Menorrhagia—Menstruation really an Inflammation—Epistaxis not from Rupture, but Secretion—Apoplexy without Ruptured Vessels—Impropriety of the term "Bursting a Blood-Vessel"—Collections of Air—Collections of Pus—Tests for Pus and Mucus, by Hunter, Darwin, and Young—Sanies—Scrofulous and Melanotic Pus—Hectic not from the Absorption of Pus—Gangrene--Sphacelus—Functional Proximate Causes—Tremors—Clonic Spasms-Semeiology--Anatomical symptoms—Thorax--Succussion—Percussion—Abdomen—Nostrils—Hippocratic Countenance—Hectic Countenance.

(7.) *Calculi.*—Calculi are of various kinds:—1. Vesical. 2. Renal. 3. Bronchial. 4. Salivary. 5. Biliary. 6. Bursal. 7. Intestinal. Bronchial calculi consist of phosphate of lime; and occur chiefly in those who work in dusty places. Intestinal calculi are often composed of magnesia; and hence they are not proper calculi, not being the result of inflammation, but being formed from the ingesta. They occur chiefly in the duodenum. They sometimes consist of phosphate of lime, with a little animal matter; and when they occur in the lower animals, are called bezoards. Sometimes they contain hairs, or are formed round the indigestible ear of an oat, or round a piece of cabbage-stalk. Intestinal calculi consist occasionally of concrete mucus, or fat, or biliary calculi.

Biliary calculi are formed of cholesterine, or resin, or mucus, or inspissated bile. They are lighter than water; are soluble in oil of turpentine, ether, and alcohol, and are fusible and inflammable. Munro speaks of a black kind of biliary calculi, heavier than water. The latter probably consist of bile very much inspissated

The vesical calculi are lithic acid, lithate of ammonia, phosphate of lime,

phosphate of ammonia and magnesia, oxalate of lime, carbonate of lime, silica, cystic oxide, xanthic oxide, and fibrin. The combustible calculi are the animal, the incombustible are the mineral. 1. Lithic, or uric acid calculus, is of a yellowish brown colour; smooth, small, and laminated. It is soluble in a solution of patash; insoluble in water, acids, and alcohol, and burns away before the blow-pipe, with a fetid odour. If acted on by nitric acid, it becomes a purpurate of ammonia. If it form an alternating calculus with phosphate of lime, the lithic acid is always internal. 2. Lithate of ammonia is white and luminated; insoluble in alkaline solutions, but soluble in nitric and muriatic acids, but not in sulphuric. It is not affected by the blow-pipe. Lithate or ammonia is said not to form calculi, though it often appears as a deposit in the urine. 3. Phosphate of lime is the most common calculi in children when ossification is going on. 4. Phosphate of ammonia and magnesia. If this calculus be put into a solution of potash, ammonia is given off, magnesia is precipitated, and phosphate of potash remains in solution. It is large, white, and crumbling; and soluble in acetic acid. Mixed with the last mentioned calculus (phosphate of lime) it forms the fusible calculus. 5. Oxalate of lime form the mulberry calculus, or, if small, the hemp-seed calculus. It is not decomposed either by acids or alkalies, but it is soluble in nitric acid. If exposed to the blow-pipe, oxalic acid is driven off. This calculus, together with uric acid and cystic oxide, are the only primary calculi, so called because formed in the kidney, and finding their way into the bladder through the ureter. 6. Carbonate of lime often occurs as a calculus in the lower animals, but has been described as occuring iu the human subject only by Crampton. It effervesces with all the acids except the uric. 7. Silica. Very rare as a calculus. 8. Cystic oxide calculus was described by Wollaston. 9. Xanthic oxide is Marcet's calculus. It is acted on by weak acids and boiling water; which the cystic oxide is not. It likewise becomes of a lemon-colour if exposed to nitric acid. 11. The Fibrinous calculus is elastic, and gives off nitrogen if exposed to action of nitric acid.

Bursal calculi are composed of urate of soda and urate of lime, and are soluble in boiling water, which very few of the other calculi are. It is probable that calculi do not arise from vitiation of the blood, but from vitiated secretiob—the result of inflammation. Biliary, bronchial, and gouty calculi, unquestionably are so, and so probably are all the rest.

S. *Depositions of Natural Fluids in Excess.*—Increased deposition of any fluid of the body may take place—whether it be a perspirable, a follicular, or a glandular secretion. The mucus which flows in increased quantity from the nostrils in catarrh, is at first thin, acid, and saline; but towards the end of the disease it is thick and mucilaginous. In hydrophobia the saliva is said to be contagious. Pyrosis is probably ptyalism of the pancreas. Glandular secretions are sometimes diminished in quantity, and at other times increased, by inflammation of their respective glands. This arises from the different part of the gland which is affected by the inflammation. Thus the difference between hepatitis and cholera, and between nephritis and diabetes, is, that in the former, inflammation is seated in the ducts of the liver and kidneys respectively, while in the latter the inflammation is in the radicles. Hence the secretion of bile and of urine is suppressed in hepatitis and nephritis, while it is increased in cholera and diabetes.

After asthma. diabetes, and hysteria, the urine has but few of its characteristic principles, but is loaded with them in gout, rheumatism, catarrh, the hot stage of fever, and in hectic. It is heavier than usual in diabetes, and lighter in dropsy; and in the latter contains much mucus.

5. *Depositions of Preternatural Fluids*—These comprehend dropsies and hæmorrhagies of various kinds; collections of air and collections of pus. Under the head of each we shall notice their characters, and the various opinions respecting their origins.

(1.) *Dropsy.*—It was an old notion, that dropsy was either active or passive, the former being the result of inflammation, or increased action, and the latter of debility, or diminished action. But dropsy is always the result of inflammation, being the increased halitus of the inflamed surfaces; just like the increased secretion of mucous in catarrh. This halitus, too, is vitiated, which it would not be if dropsy were a mere effusion, and, beside, the preceding symptoms of inflammation are often well marked. This doctrine is supported by Parry, Grappengreisen, Rush, Blackall, Ayr, Abercrombie, Frank, Hoffman and others.

Dropsy cannot be from diminished absorption, for absorption is rapid in dropsy.

Why should the absorbing vessels refuse to take up the dropsical fluid, while they take up other matters very readily; such as mercury rubbed into the thighs? It is true that dropsy may be produced by obstructing the veins, but this does not prove that dropsy arises from diminished absorption, for by this obstruction the capillaries must be overloaded, and this will give rise to increased secretion. Increased arterial action alone would not produce dropsy. It would push the blood into the veins, but would not cause effusion. It is not from debility, for there is often much debility without dropsy. Dropsical fluid is generally coagulable by heat; but the fluid of hydrocephalus is usually an exception to this rule. There are often shreds of coagulable lymph floating in it.

You may be surprised at my placing rickets among the dropsies; many of those who have paid most attention to the subject, attribute it to increased deposition of fluid of some kind. An extensive assortment of theories, chiefly chemical, has been proposed on the subject. All analogy is against the supposition of defective deposition, and we must therefore ascribe it to increased absorption. Phosphate of lime has been found in the lymphatics in such cases. The cellular tissue of the bones must be liable to increased deposition of fluid, as well as the cellular tissue elsewhere; and this increased quantity of fluid must produce pressure, and increased absorption. The bones in rickets are soft and red. What could be a stronger evidence of inflammation, and what a more natural termination of this inflammation, than a deposition of fluid? This is the opinion of Boyer, Beclard, and Howship; and I adopt it from its consistency with analogy, which I think must be our guide here.

The ulcer which takes place at the ancle, in cases of varix of the saphena vein, is from a major degree of inflammation from pressure, for the ulcer was preceded by œdema. Blackall says that dropsy is frequently the result of inflammation, and Hare, that it is always so. Carmichael Smyth advocates the opposite view of the case, and attributes hydrocephalus to debility. But now that inflammation is thought to be diminished, instead of increased, action, it amounts to the same thing as debility. The question is, whether in hydrocephalus we have the fever which attends inflammation or not? The question whether the increased fluid is the result of secretion or of exudation, is not a mere dispute about words, for it amounts to the question whether this effusion is active or passive, or whether it is the result of inflammation or not. Smyth advocates the negative side of the question. Dropsies, however, are not a mere exsudation of serum, for the effused fluid often differs from serum. I should think that every termination of inflammation is regulated by a diathesis, which is dependent on the constitution of the individual, and that scrofula is no more hereditary than hæmorrhage, as a termination of inflammation, though it is more remarkable. Vesicles are dropsies in the skin, and bullæ are dropsies on its surface.

(2.) *Hæmorrhage.*—Hæmorrhage is analogous to dropsy, as is seen in pulmonary apoplexy, blind piles, chemosis, sanguineous apoplexy, hæmathorax, hæmatocele, and purpura hæmorrhagica. Blood is often discharged by the natural outlets of the body. Coagulable lymph contains within itself the rudiments of organization, but blood does not, and therefore when the latter is extravasated it is never organized, but becomes surrounded by a cyst.

The menstrual secretion sometimes degenerates into hæmorrhage; but what is inflammation at first, must be inflammation throughout. If menstruation were mere effusion, there would be no preceding febrile symptoms, such as do attend it. Sudden and copious epistaxis does not prove that a rupture of some blood-vessel must have taken place; for the lachrymal gland will speedily secrete a very great quantity of tears; and there is no pretence of rupture here. The flow of blood in epistaxis, is much more likely to be from secretion, than from the rupture of a few vessels so minute, that they cannot afterwards be discovered. Even in apoplexy, Abercrombie and Cheyne have looked in vain for ruptured vessels. What are the premonitory symptoms of apoplexy, but the symptoms of encephalitis? Some of the early pathologists used to speak of a power in the blood itself, overcoming the resistance of its vessels; and sometimes the latter giving way from putrefaction. It is quite time to discard the cant about "breaking a vessel," or "bursting a vessel," or a copious hæmorrhage from large vessels, and a hæmorrhage from small vessels; or about tying ligatures round the limbs, to prevent the blood from going to the lungs. The division, likewise, of hæmorrhages into active and passive, or into those which come from the arteries and those which

are furnished by the veins, is quite unfounded.

(3.) *Collections of Air.* — Hunter showed that air might be secreted from the arteries; and Baillie, that it was the result of inflammation. Davy found that the air in the intestinal canal was composed of oxygen and nitrogen in the upper part, and of nitrogen in the lower. Air sometimes is produced in situations where there is nothing to ferment, as in the arterns, peritoneum, and pleura.

(4.) *Collections of pus.* Suppuration was thought by Hippocrates to be a melting of the solids; and by Boerhaave and Cullen to be an effusion of vitiated serum. De Haen and Morgan proved that pus is a secretion. It is heavier than water, globular, opake, and cream-coloured; has a disagreeable odour, especially if thrown on burning coals, but not if kept from the air. Mucous is distinguished from it by being lighter than water, translucent, of a stringy consistence, and destitute of odour. It is not soluble in water to potash, which pus is. Darwin's test is to put them into sulphuric acid, and to add water. The pus descends while the mucus ascends. Hunter's test is muriate of ammonia, which dissolves pus, but not mucus. Young says that if placed between two pieces of glass and held before the candle, the pus will appear to have a halo round it.

Pus is one of the only four fluids in the body which contain fibrin. The others are blood, lymph, and chyle. Pus coagulates spontaneously and is easily miscible in water. It used to be said that the use was to defend the parts it covered from air, to soften the flesh, &c. It is probably to granulations, what coagulable lymph is to adhesions, containing in itself the rudiments of their formation. Sir Everard Home says that carbonic acid exists in pus as well as in coagulable lymph.

Sanies is an impure kind of pus; thin, brown, acrid, and not coagulating. There is also the pus of scrofula, melanosis, and fungus hæmatodes. Persons have been innoculated with scrofulous pus, and with cancerous matter, without any ill result.

But this only proves that healthy tissues are not liable to scrofula or cancer. The experiment should have been tried by applying scrofulous matter to tubercles, and cancerous matter to scirrhus. Pus furnished by the inflammation of natural tissues, will produce a similar disease elsewhere; as is proved by lues venerea, ophthalmia, &c.

It has been supposed that hectic fever resulted from the absorption of pus; but in case even of large abscesses, there is no hectic till they are opened, a new action is set up for the restoration of the diseased parts, and there is often hectic when there is no pus.

(6). *Gangrene.* This is said to be either dry or moist. Dry gangrene results from the obliteration of the small arteries; moist gangrene is the consequence of inflammation. The symptoms of humid gangrene are at first those of inffammation. The part then becomes of a purple colour; the pain goes off at once; there is a bad odour with crepitation from the effusion of air under the cuticle, in consequence of putrefaction. If the latter takes place, so that the part is easily torn, it amounts to sphacelus, or the death of the part. If the blood be pressed out in gangrene, it does not return. Dry gangrene appears to arise from a defect of nourishment. There is no bad odour, and the part does not putrify, but becomes a dry mass and falls away, like umbilical cord, or like the leaf of a tree in Autumn.

7. *Functional Proximate Cause.*—This may consist either in increased action, diminished action, or perverted action. A spasm is an example of the first, paralysis of the second, and a convulsion of the third. Spasm does not necessarily diminish the calibre of an organ, probably because it affects only a part of the length of the muscles attached; and hence the dragging away of one part from the others, may be partly the cause of the pain which is felt. A tremor is a loss of balance of muscular power from diminished action, and approaches to palsy. A convulsion is a loss of balance from increased action, and approaches to spasm. A clonic spasm is a convulsion; palpitation of the heart is an example of it.

Semeiology.

Dr. Gregory says that the symptoms of diseases may be divided into three classes. 1. Impeded functions. 2. Altered appearances. 3. Uneasy sensations. The second may be judged of without asking any questions; the third must be learned from the patient; and the first is to be inferred by comparing the other two. But sensation is a function, and belongs therefore to the first class, although marked as the third; and many symptoms (heat for instance) are referable to all three. The French divide them into three likewise, but differently. 1. Com

memorative symptoms. 2. Diagnostic symptoms. 3. Prognostic symptoms. This arrangement may be very well for individual diseases, but not for a general scheme; for a symptom which is commemorative in one disease, may be diagnostic in another, and prognostic in a third. I divide them into two. 1. Altered appearances, or anatomical symptoms. 2. Altered functions, or physiological symptoms.

1. *Anatomical Symptoms.*—Alterations from disease may take place in the aspect and sensible properties of all parts of the body. Those patricularly worthy of notice, in this respect, are the chest, abdomen, nostrils, eyes, general integuments, &c.

1. *Thorax.*—The external aspect of the chest is not much altered in disease. It may be enlarged or contracted, and those states comprise almost all the sensible changes of which they are susceptible. It is enlarged from collections of air, water, or pus, within. It may be contracted, generally on one side, from pleuritic adhesions, and after paracentesis. Adhesions of the pleura cause difficulty of breathing in the lung to which they correspond, so that the muscles are not used on the left side so much as on the other, and this causes a diminution of size, which may be ascertained by admeasurement. This is Laennec's plan. Succussion is as old as Hippocrates. It is used in hydrothorax, hæmathorax, and pleuritis; but these must be combined with pneumothorax, in order to render it available. Percussion was introduced by Avenbrugger. It is used in all organic diseases of the lungs. The sound on percussion is dull in hydrothorax, pulmonary apoplexy, hepatization, empyema, tubercles, in all dispositions of solids or fluids, and in short in all diseases of the lungs, except pneumothorax and emphysema.

2. *Abdomen.*—The abdomen may be contracted or enlarged. It is contracted in colic for instance, in which disease it has likewise a knotted feel. It is tumid in ascites, physconia, &c.

3. *Nostrils.*—The nostrils are dilated in phrenitis, tetanus, and all diseases of excitement and impeded respiration. They are constricted in asphyxia, and all diseases of depression. This constriction is very remarkable in the hippocratic countenance, which depends on defective muscular action. It is likewise characterized by collapse of the temples, opening of the mouth, and hanging of the lips. The hectic countenance is distinguished from it by redness of the cheeks. In all particulars it resembles the hippocratic, but depends on a different cause,—the want of fat. This absorption of fat, which causes general emaciation of the body in hectic, was thought by Cullen to be for the purpose of counteracting the acrimony of the absorbed pus; in the same way as in girls who drink vinegar, to make themselves thin, the fat was thought to be absorbed in order to counteract the acrimony of the blood produced by acid. The expansion of the nostrils in dyspnœa is not for the purpose of admitting more air, for if that were the case the mouth would be open; but it is owing to the great stimulus applied to the portio dura, which sets all the muscles supplied by it into energetic action.

LECTURES ON SURGERY.

By John Hunter, F.R.S.

Of the Heat of Animals.

It has been much disputed whether heat is matter, or only a property of matmatter. If it is simply matter, then wherever there is heat there must be that matter present. If heat is a property of matter, there must be both matter and property present. If heat is only an action in a particular matter, then there is that matter with its action, as also the body which throws this matter into the action.

Heat and cold are opposite principles, and cannot inhabit the same place. They occupy different parts of the globe, and in some places alternately; these, therefore, are subject to the variations of temperature, which cause varieties of climate. These will be further spoken of hereafter.

Heat, although not equally distributed all over the globe, yet exists in such a degree as to pervade all matter, and is therefore to be found in some proportion everywhere. Heat destroys attractions of all kinds, by which means it becomes the principle of fluidity, and consequently the reverse of the cohesive attraction, or principle of solidity. By means of this effect, motion is allowed to take place among the particles of matter. We have no other idea respecting the variations of heat, except as regards quantity. The quantity of heat has always been estimated by some visible effects, at first probably by our sensations alone, but afterwards by its effects on the expansion of bodies, especially of metals, all of which is called

sensible heat. But it has been discovered lately that many bodies retain more heat than can be made sensible by any of the commonly constructed instruments; therefore a body may have the matter of heat in it without its producing any sensible effects. Hence heat has now been divided by some into sensible and absolute heat. It may be possible that many bodies may have their whole heat made sensible; if so, then their sensible and absolute heat are the same. But it is most probable that the absolute heat of a body can never be known, for the measure of the quantities of heat from every experiment is always by sensible heat, which can never be a proof of the absolute heat in a body.

The real increase of heat must alter the position of parts so as to produce the sensation called heat; and as this heat is diminished, the texture or position of the parts is altered the contrary way, which, when carried to a certain degree, becomes the cause of the sensation of cold. Now these sensations could not take place without a real increase or decrease of heat in the parts. When heat is applied to the skin, it becomes hot in some degree, according to the application. This may be carried so far as actually to burn the living parts. On the contrary, in a cold atmosphere a man's hand shall become so cold as to lose the sensation of cold altogether, and change for that of pain.

Real heat and cold may be carried so far as to alter the texture of parts on which the actions of life depend. Nature has allowed the heat of most animals to come much lower than the heat necessary for performing all their natural functions. This is most so in the more imperfect animals, although it exists in a considerable degree in those possessed of a better regulated standard of heat as the most perfect.

This answers the wisest purposes, for by allowing the heat to come to that degree in which many actions are suspended, or annihilated, the state of the animal is adapted to the state of the atmosphere, which is such as would render the effects of those actions unnecessary, or of no effect.

The first action that is suspended is the propagation of the species; for if birds were to hatch, or animals to bring forth their young, in winter, there would soon be an end to propagation in the temperate and frigid zone, as animals in general only breed once a year.

Cold also annihilates the powers of digestion in all those animals whose food is rendered impossible to be procured in the winter, and which have not power of emigration, such as frogs, lizards, snakes, bats, hedgehogs, &c.

The power of generating heat was the first considered; the possibility of generating cold being hardly suspected, because most people who made observations on this subject lived in an atmosphere colder than their own body. They observed, that in almost all animals there was a standard of heat, which in common language has been called blood-heat. However, they extended their observations a little further, and called a certain number of animals the cold-blooded animals, but made no experiments either to ascertain the effects or the principle on which they depended.

If we examine any class of animals, we shall find them, more or less, endowed with this principle, though varying from one another very materially in this respect. The heat of the human body being always considerable, even in the coldest climate, it has necessarily attracted a good deal of the attention of philosophers and physiologists, and various have been the opinions which they have formed respecting its cause.

Friction being a cause of the production of heat in many bodies, was supposed to be the cause of heat in animals, especially too, as they thought it could easily be explained on this principle, for they observed there was sufficient motion in the body for such an effect, which motion was principally that of the blood. They calculated the size of the internal surfaces of the arteries, which increases as they divide. They calculated the size and number of the red globules; all of which furnished an amazing extent of surface for friction; and when they calculated the velocity of the blood moving on this extent of surface, as also of the globules on one another, they thought they saw a sufficient cause for the heat of the body, especially as they saw that when this motion was increased, as in fevers, the heat was to appearance greater. But we may say at the same time, that they did not see the objections to this theory, which are many.

Dr. Stevenson observed, that there was another cause for the production of heat besides friction, viz. fermentation, and on this principle he accounted for animal heat. But the fermentation of animal substances does not produce heat.

The superstructure built on the foundation that the friction, from the motion of the

blood, is the cause of animal heat, falls immediately to the ground on the observation that fluids have no power of generating heat; nor have two solids, if kept asunder by the intervention of a fluid of any kind. If this had not been a fact, still friction probably would not have accounted for all the variety in the production of heat. Nor could the principle of fermentation account for all the phenomena which attend the heat of animals; therefore some other principle must be referred to as the cause.

It being discovered that the absolute heat of bodies differ very much in different substances, and perhaps in the same substances differently combined, it was thought that this would account for the production and continuation of animal heat. It is supposed that the air which we inspire has much more absolute heat than the same air when we expire it, and that the superabundant heat of the inspired air is given to the animal. But this chemical method of accounting for heat will not account for all the varieties in the heat of animals at different times, especially in diesase, when the breathing does not equally vary or correspond with the heat of the animal.

A remarkable case fell under my observation of a gentleman who was taken with an apoplectic fit. He lay insensible in bed, covered with the blankets. I found his whole body would become extremely cold in every part, and continue so some time, and in a short time would become extremely hot. While this was going on, several hours alternately, there was no sensible alteration either in the pulse or the breathing.

A man fell from his horse, and pitched on his head, and produced all the symptoms of a violent injury. There was concussion and perhaps extravasation of blood, but no fracture could be seen. The pulse was at first 120 beats, but came to 100, and sometimes to 90, and was strong, full, and rather hard. He was very hot in the skin, but breathed remarkably slow, only half the common frequency.

His breathing, pulse, and heat therefore did not correspond with this theory of heat.

February, 1781.—A boy about three years old appeared not quite so well as common, being attacked with a kind of shortness of breathing in the night. It had become exceedingly oppressive about 1 o'clock on Sunday morning, so difficult that he appeared dying for want of breath. In this state he lay till ten o'clock when I saw him. He was breathing so slowly that I thought every breath would be his last, about two and a half inspirations, or even less, in a minute. (The common rate of breathing in such a boy is about thirty inspirations in a minute, and about twenty in a man.) When he drew his breath it was with a jerk; but his expiration was extremely slow, generally continuing through five seconds. I often could not distinguish the pulse, at other times it was very manifest, although very faint and slow, not more than sixty. On tying up the arm the vein did not rise in the least, so that the blood did not go its round. His eyes were turned under the upper eyelid; while his body had a purple cast, especially the lips, which is easily accounted for,—it was owing to the blood not getting the scarlet red in its passage through the lungs, and whatever it might get there was lost in its slow motion through the arteries of the body. He had a fine warmth on the skin all over the body, although in a room without a fire, not covered with more clothes than common in the month of February, with snow falling at noon.

Here it cannot be said that the heat of the body, which was neither great nor deficient, could arise from the constant supply furnished by respiration.

It appears from the account given in the Philosophical Transactions of the experiments made in the heated room, under the direction of Dr. George Fordyce, that Dr. Cullen long ago suggested many arguments to show that life itself had a power of generating heat, independently of any common mechanical or chemical means; though we may observe, that the experiments here related only tend to show the power of producing cold, which they effectually do.

I own I had formed an opinion on this subject. I rather supposed that animal heat was owing to some decomposition going on in the body, and in pretty regular progression, though not the process of fermentations, though not the process of fermentation.

In consequence of an experiment made on two carp, to explain another principle in the animal œconomy, (where every common action was meant to be wholly suppressed, or so far suppressed as to render them incapable of producing heat,) I found an effect produced while the animals were under the experiment which I did not suspect. I began, in consequence, to suspect some other cause of heat than

the common or natural actions of an animal; for during the experiment I observed a remarkable reproduction of heat taking place in these two animals. Until this time I had not an idea that there was a possibility of calling the principle forth, or that cold could excite it.

Experiment.—In the year 1766 two carp were put into a glass vessel with common river water, and the vessel was put into a freezing-mixture. The water surrounding the fish frose very rapidly on the inside of the glass all round. When the freezing-process approached the fish it became as it were stationary; and the remaining water not freezing fast enough, in order to make it freeze sooner I put in as much cold snow as made the whole thick. The snow round the carp melted. I put in more snow, which melted also. This was repeated several times, till I grew tired, and I left them covered up to freeze by the joint operation of the mixture and the atmosphere. After having exhausted the whole power of life in the production of heat, they froze; but that life was gone could not be known till we thawed the animals, which was done very gradually. But with their flexibility they did not recover action, so that they were really dead. Till this time I had imagined that it might be possible to prolong life to any period by freezing a person in the frigid zone, as I thought all action and waste would cease until the body was thawed. I thought that if a man would give up the last ten years of his life to this kind of alternate oblivion and action, it might be prolonged to a thousand years; and by getting himself thawed every hundred years, he might learn what had happened during his frozen condition. Like other schemers, I thought I should make my fortune by it; but this experiment undeceived me.

This experiment laid the basis of many of my future conjectures on animal heat.

I think we may observe in the common occurrences of life that for the actions of an animal a certain quantity of heat is necessary; and this quantity I find to be in some degree according to those actions, the greatest degree of heat being always wanted for the least essential action in every order of animals. However, every order of animals in general requires a heat peculiar to itself, though not always so, some admitting of a much greater variety than others even of the same order, as in the insect tribe.

The actions of an animal may be placed in the following order with respect to its heat, which is the inverse order to that of their immediate use in the machine. Propagation first; digestion; sensation, in which may be included wakefulness; secretion; circulation; each requiring its degree of heat for complete action. Propagation requires the greatest, digestion may be carried on with a degree less, secretion in two degrees less than propagation, and so on.

In the insect tribe there is a difference between a bee and a wasp and many flies. A bee at all times requires a heat above 20 (?) degrees to support life with ease, while a wasp can allow its heat to vary with the atmosphere without losing life.

A CASE OF FATAL POISONING BY ARSENIOUS ACID:

With Remarks on the Solubility of that Poison in Water and other Menstrua.

By Mr. Alfred S. Taylor.

(From Guy's Hospital Reports.)

A female, aged twenty-five, was admitted into Guy's Hospital, May 17, 1836, under the care of Mr. Cooper, suffering from symptoms of poisoning by arsenic.

It appears, that about four o'clock in the afternoon of that day, she had taken a quantity of arsenic, which, from her description, must have amounted to about forty grains. She procured it in a small lump, reduced it to a coarse powder, which she then loosely mixed with water, and in that state she swallowed it. In about an hour afterwards she became very ill, and vomited: she had pain the stomach, great thirst, and a sense of constriction in the throat. A medical practitioner, who was called in, administered emetics and mucilaginous drinks, from which she experienced some relief. She became worse in the course of an hour or two, and was subsequently brought to the Hospital. This was about eleven o'clock in the evening, and, therefore, about seven hours after she had taken the poison. She was then labouring under the following symptoms:—the countenance was pale and anxious; the extremities were cold; there was occasional vomiting; *great thirst*; and the tongue was moist, but very red; *the pain in the stomach was not great, and not increased by pressure;* the pulse was 134, very irregular, but rather full; there was no pain in the

head; and her mental faculties were unimpaired.

As she had, previously to her admission taken emetics, which had acted freely, it was not thought necessary to resort to any further exhibition of them. A saponaceous mixture, consisting of equal parts of oil and lime-water, was, however, thrown into the stomach, by means of the stomach-pump. This was for the purpose of enveloping any residuary particles of poison, and sheathing the coats of the organ from their influence. The stomach was first well washed out with this mixture, and then about three ounces of it, mixed with forty drops of tincture of tincture of opium, were injected into the organ, and allowed to remain there.

She was seen the following morning, at half-past one; she then complained of great thirst, but there was no increase of pain in the stomach. Her tongue was dry and red; her extremities had become warm; there was no pain in the head. The heart was acting rapidly, but feebly; the pulse being about 132, small and feeble. After this, she obtained some rest for about an hour and a half; but she then became extremely restless, repeatedly calling for liquids. The thirst continued unabated untill her death, which took place at a quarter-past seven in the morning, a little more than *fifteen hours* after having taken the poison. Just before her death, her parents came to see her; she was then very restless, but perfectly sensible. She had sat up in bed, and was in the act of drinking, when she suddenly had a slight convulsive fit, and almost instantly died.

The body was examined by Mr. King about eight hours after death. The thoracic viscera presented no appearances calling for notice; but the lining membrane of the bronchiæ was rather dark in colour, and congested.

On opening the abdomen, and exposing the cavity of the stomach, this organ was found to contain a dirty yellow-coloured liquid, somewhat tenacious and holding, diffused through it, opaque grains of a white matter, evidently arsenic. Particles of the same substance, enveloped in mucus, were found scattered over the surface of the mucous membrane in different parts. The appearances presented by the stomach, when seen and examined shortly after its removal, was as follows. The mucous membrane was very rugose, especially at the larger extremity and inferior portion. The edges of the rugæ were, for the most part, vascular; whilst, in the interveniug depressions, there were here and there dark-coloured patches of blood, extravasated beneath the mucous membrane. There was great vascularity of the membrane in the upper part of the organ; and there were three distinct lines, of a vermillion redness (the colour having become a little more intense hy exposure) running parallel to each other, for nearly the whole of the interspace between the pyloric and the cardiac orifices. These lines terminated in a well-defined margin ef redness, situated at the junction of the cardia with the œsophagus.

The most stricking morbid changes, however, in the stomach existed near the larger curvature, towards the pyloric extremity. Here there was a large prominent oval patch of thickened membrane, about three inches in length and two inches in breadth. This patch was, in the first instance, covered with a dense layer of opaque mucus, with difficulty separable, containing small granules of arsenic diffused in a white pasty mass. When the surface was washed, it was seen to be of a yellowish colour in the centre, and it was surrounded by a dark margin, as of extravasated blood. At this part, the coats of the stomach were at least three-quarters of an inch in thickness. There was no trace of ulceration or corrosion in any part of the mucous membrane. The peritoneal coat was slightly injected.

In the report of the examination, it is stated that the small intestines contained a great quantity of viscid mucus, tinged with bile. The duodenum was but slightly vascular; but the jejunum was in a high state of inflammation, in circumscribed patches, these portions of the mucous membrane being covered with an easily separable layer of mucus. The lining membrane of the last twelve inches of the ileum, as well as that of the cœcum, was slightly inflamed. The rest of the intestinal canal, with the other organs of the abdomen, presented no abnormal appearances. From the condition of the uterus and its appendages, there was reason to suspect that impregnation had recently taken place.

The head was not examined.

This case appears to me to be worthy of attention in several points of view. The time at which the symptoms commenced, after the poison had been swallowed, was about the ordinary period; namely, *an hour*. The most remarkable circumstance, in their history, is, the general absence of pain thoughout the pro-

gress of the case. It is true, that, in the first instance, there was pain in the stomach; but this soon abated, and did not afterwards return to any perceptible extent. In the generality of cases of poisoning by arsenic, pain is one of the most striking symptoms, especially in those in which the post mortem inspection reveals such extensive changes in the stomach as were met with in this instance. In arsenical poisoning, also, the pain is commonly excruciating, being compared by the patient to a fire burning within his body. It is, generally, much aggravated on pressure; and goes on increasing in intensity, with only occasional remissions, until the time of death; but here, these features are entirely wanting. Several instances are on record, in which this symptom of poisoning by arsenic has been absent; and we ought, therefore, in suspected cases, to be prepared for such an anomaly. Dr. Christison mentions an instance of this kind, and others are reported by Orfila. In general, where the pain in the abdomen is slight, death takes place much more speedily, and the post-mortem changes are much less extensive than in the case before us. Dr. Christison has formed a separate group of these cases, constituting his second variety of poisoning by arsenic, in which symptoms of cerebral disturbance are often manifested. Here, however, it is to be observed, the mental faculties remained unimpaired till the last; and neither camatose symptoms nor convulsions manifested themselves during the progress of the case.

One of the most prominent symptoms under which the deceased laboured was the *extreme thirst*, which she in vain endeavoured to assuage by having constant recourse to liquids. I have noticed the presence of this symptom, to a similar extent in three other cases which have fallen under my observation. It certainly is not always present in arsenical poisoning; but, at the same time, I think too little notice has been taken of it by British toxicologists. One of our best writers on toxicology, Dr. Christison, mentions this symptom only in a cursory manner. Continental medical jurists, however, attach full importance to this sign; and Prof. Martini looks upon it, when conjoined with dryness and constriction of the fauces, as affording the most certain evidence of irritant poisoning. The other symptoms require no particular remark.

The treatment pursued was perhaps the best which, under the circumstances, could have been applied. The viscid mixture of oil and lime-water was well adapted to sheathe the coats of the stomach, and, certainly, by more effectually enveloping and retaining the undissolved portions of the poison, to facilitate its removal by the stomach-pump, from the cavity of the organ. Lime-water has been proposed as a chemical antidote in poisoning by arsenic; but in the case before us, its mechanical operation, mixed with oil, was alone relied on. Lime, it is true, will combine with arsenious acid, and form an arsenite; but this arsenite is easily redissolved, either by a slight excess of the poison, or by the presence of a small quantity of acid, such as that which is ordinarily contained within the stomach. Besides, the arsenite of lime thus formed, like the other arsenites which are insoluble in water, is capable of acting deleteriously, so that the alleged antidotal powers of lime-water are now generally exploded.

Another point of interest, in a case of poisoning by arsenic, is the period at which death takes place. In that before us, the deceased died within the average period, which may be taken at from *six to twenty-four hours* after the ingestion of the poison, when the dose has been large. Many cases do not prove fatal until from twenty-four to forty-eight hours, while, in some instances, the patient is destroyed in less than six hours. Taking the most severe cases of arsenical poisoning, however—of which this was one—the above may be assumed as the average period within which death will ensue. This question of the time at which arsenic proves fatal is, perhaps, not so interesting in a physiological, as in a medico-legal point of view; but is one for which a practitioner must be prepared. In a trial that took place at the Lewes Assizes, Autumn, 1826, which is referred to by Dr. Christison, the fact of the prisoners' guilt, of which the moral evidence left but little doubt, rested almost entirely upon the decision of this question. The deceased, it appears, died within *three hours* after the only meal at which the prisoners could have administered the poison (arsenic to him; and one of the witnesses for the defence is reported to have assigned, among other reasons, why the deceased had not died from poison, that arsenic never destroys life within so short a period as three hours. Dr. Christison very properly censures so dogmatical an opinion, and adduces many cases to show that life may be very rapidly destroyed by this poison. The shortest case, quoted by

him from a German writer, proved fatal in *three hours*. There are numerous instances on record, in which life has been destroyed in from three to six hours after the taking of the poison; and I find an instance, reported by Meckel, in which death followed in *two hours and a half*. A case of probable poisoning by arsenic is mentioned by Remer, which proved fatal within *half an hour* after the ingestion of the poison. Setting aside the last case referred to, we see that arsenic may destroy life within a very short period of time, although it is comparatively rare to find it proving fatal in less than six hours.

In looking over the post-mortem appearances, we find the chief seat of mischief, as usual, in the stomach. The extreme degree to which inflammation of the mucous mombrane of this organ had advanced, within the short period of fifteen hours, is, however, worthy of remark. The local irritant action of the poison was here most regularly manifested, but there was neither ulceration nor gangrene. The effusion of dark blood beneath the mucous tunic has, perhaps, often given rise to the supposition of the existence of gangrenous spots in the stomach, in cases of arsenical poisoning. These patches of extravasation existed here chiefly in the interspaces of the rugæ, as well as around the raised oval portion of the stomach, at the pyloric extremity. The coats of the viscus were much thickened in the last mentioned situation; a condition which does not appear to be very unfrequent; and, perhaps, on the whole, is a much more common morbid change from arsenic, than perforation. Metzger met with this thickened state of the coats of the stomach; and Pyl reports a case in which the parietes of the viscus had twice there usual thickness.

Lastly, it remains for me to describe the plan pursued for the identification of the poison. The confession made by the deceased, as well as the nature of the symptoms, left but little doubt that arsenic had been taken; but a case is always rendered more satisfactory when. to these sources of evidence, we can add the certainty commonly derivable from chemical analysis.

Knowing that the poison had been swallowed in the state of a coarse powder, I considered it not unlikely that some undissolved particles might exist in the contents of the stomach. The liquid found in this organ was of a yellowish colour, and of thick gruelly consistency, containing, diffused through it, lumps of coagulated matter. A portion of this liquid was diluted with warm distilled water, placed in a glass vessel tapering to a point at the bottom, and then violently shaken. After waiting a minute the liquid was rapidly poured off into a dish, and at the bottom of the glass numerous hard masses, apparently of arsenious acid, slightly discoloured, were found. These were picked out, dried, and heated with black flux, when several well-defined rings of metallic arsenic were obtained. This process of separating arsenious acid, by its great specific gravity, I have often found to answer, where the viscidity of the liquid containing it, had been removed by the addition of distilled water. In this way, the examiner may frequently save himself a great deal of trouble and research.

Another portion of the contents of the stomach, diluted with distilled water, and well acidulated with acetic acid, was now boiled for two hours. It was filtered while hot through fine muslin, and afterwards through paper; this, owing to the abundance of organic matter, was a very slow process. The liquid obtained by this second filtration was still turbid; but it contained comparatively little organic matter, although sufficient to prevent entirely the application of the silver and copper tests. The filtered liquid was now divided into two portions. Into the first, after it had been acidulated with acetic acid, sulphuretted hydrogen gas was passed to saturation: a golden-yellow coloured compound was speedily formed, which slowly subsided, after boiling the solution to drive off any excess of the gas. The precipitate thus obtained was obtained was proved to be sesquisulphuret of arsenic:—1st, by its insolubility in the mineral acids; 2dly, by its perfect solubility in strong liqour ammoniæ; and 3dly, by its yielding a ring of metallic arsenic, when slowly heated with four times its weight of black flux. The precipitated sesquisulphuret was combined with a portion of extraneous matter; but I have never found this an obstacle to the determination of its true chimecal characters, except when the foreign matter has been in unusually large quantity. The sesquisulphuret is not so easily reduced to the metalic state as arsenious acid; it requires a larger quantity of flux, and it is, perhaps, better to use a lower heat, and to apply it more slowly, than in the case of arsenious acid.

The second portion of filtered liquid, having been slightly reduced it bulk by

evaporation, was now treated with an excess of alcohol, and introduced into the ingenious apparatus which had been then but recently proposed by Mr. Marsh, of Woolwich, for the detection of minute quantities of arsenic. The principle of this discovery is, to generate hydrogen gas slowly in the midst of a liquid containing any arsenious or arsenic acid, or any of the soluble salts formed by the union of these acids with bases. In all of these instances, the nascent hydrogen combines with the *metallic arsenic*, resulting from the decomposition of the acid or salt, and forms a gas well known as the arseniuretted hydrogen. This gas is generated under the pressure of a column of water, in a glass tube bent upon itself, so that the two legs (one of which is only half the length of the other) are parallel. The shorter leg is provided with a stop-cock; and it is in this leg that the gas is produced, by dropping a piece of metallic zinc into the suspected poisonous liquid previously acidulated with sulphuric acid. When the arseniuretted hydrogen has collected so as to fill the shorter leg of the tube, it is allowed to escape from the stop-cock; and at this moment, if a lighted taper be applied, it will burn with a dull white flame; and if, at the same instant, a plate of clean glass be brought over the flame, a circular stain of metallic arsenic is formed upon it, whilst the combustion of dydrogen, at the same time, produces a ring of aqueous vapour around the metallic stain. In some instances, the quantity of arsenic deposited in the metallic state is such, that a perfect leaf of the metal may be raised from the surface of the glass.

In the case before us, upwards of twenty crusts of metallic arsenic were produced from about three drachms of the filtered liquid, treated with alcohol. The object of using alcohol, is to prevent the frothing of the liquid within the tube, which, in a mixture containing organic matter, is very likely to occur; and when this does occur, it interferes with the free escape and combustion of the gas. The precise nature of the sublimate was determined by the coroborative experiment mentioned in the note.

The coments of a portion of the jejunum, which had been insulated for the purpose of examination, were now submitted to analysis by the same processes, and with equally satisfactory results. The hydrogen test showed that arsenic was abundantly present in the fluids of this part of the alimentary canal.

THE ANATOMIST.

Spinal nerves.—Symmetrical, 30 pairs, viz.:—8 cervical, 12 dorsal, 5 lumbar, and 5 sacral. Each spinal nerve has two roots, an anterior and a posterior. The anterior is small, and is the motor division. The posterior large, with a ganglion upon it, and is for sensation. These roots are separated by the chord itself, and by the ligamenta denticulata. The anterior root is connected to the surface of the ganglion of the posterior root. On the outer side of the ganglion both nerves unite in a single chord, which, after a short course, divides into an anterior and posterior branch. The posterior branches are the smaller, (except that of the second cervical) and are distributed to the dorsal muscles and integuments. The anterior branches form the several plexuses, and supply the muscles and integuments anterior to the spine, and also the extremities.

Distribution of the eight Cervical Nerves and First Dorsal Nerves.—*Posterior branches* are small, except the second cervical, which accompanies the occipital artery; the rest are lost in the neighbouring muscles and integuments. *Anterior branches.*—The first, or sub-occipital, twists round the atlas, to unite with the second, forming the nervous loop of the atlas: and the second, having received the first, descends to unite with the third. The third unites in like manner with the fourth, and thus is formed, by the anterior branches of the four first cervical nerves, the *Cervical Plexus.* From this plexus proceed. 1. *Ascending superficial branches* to the platysma, integuments, parotid gland, ear, and back of the head. One of these is called *ascendens colli*, which arising chiefly from the third cervical, is distributed to the ear; it accompanies the external jugular vein. 2. *Ascending deep branches* which supply sterno-cleido-mastoid, digastric, splenius, and adjacent muscles. 3. *Descending internal branches*, which sends a superficial branch to join the descendens noni and the deep or *phrenic*, or *internal respiratory.* This nerve comes chiefly from the fourth cervical, and often receives a filament from the brachial plexus, having sent small filaments to the liver, œsophagus, inferior cava, and stomach,; it ultimately distributes itself to the diaphragm. 4. *Descending external branches.* The superficial branches of this set are distributed to the clavicle, acromion, pectoral,

and deltoid muscles and integuments; and the deep branches to muscles of the neck and scapula, one of which (the largest) is given to the serratus magnus muscle, and is the *external respiratory nerve.*

The Brachial Plexus is formed by the union of the anterior branches of the four inferior cervical and first dorsal nerves. From this plexus proceed *Thoracic nerves*, they are four or five in number, and come off from the upper part of the upper part of the plexus; they divide into—1. anterior thoracic branches, which descend behind the clavicle, in front of the axillary artery, and supply the pectoral muscles. 2· Posterior thoracic branches, which pass behind the axillary vessels to the serratus magnus and rhomboid muscles. *Supra-scapular nerve* passes through the notch in the scapula, and supplies the supra-spinatus, infra-spinatus, and teres muscles. *Subscapular nerves* are three or four in number, and descend behind the vessels to the subscapular, latissimus dorsi, and teres major muscles. · *Internal cutaneous nerve.* 1. External branch, which descends over the bend of the elbow, as low as the wrist. Internal branch descends towards inner condyle, and sends branches to inner and posterior part of the fore-arm. *External cutaneous*, musculo-cutaneous or perforans lasserii. 1. Branches to coraco-brachialis biceps and brachiæus anticus. 2. Anterior branch to the ball of the thumb and palm of the hand. 3. Posterior branch to the dorsum of the hand. *Median nerve*, or brachial verve. 1. Branches to superficial and deep pronators and flexors. 2. Anterior interosseal nerve, which supplies the deep flexors, and binds a branch to the pronator quadratus, and another to the dorsum of the hand. 3. Superficial branch given off above the wrist, which runs to the palm of the hand. 4. Five digital branches, which supply the thumb, index, and fore fingers, and the radial edge of the ring finger. *Ulnar nerve.* 1. Muscular branches to triceps, flexor sublimis, and flexor ulnaris mucles. 2. Dorsalis carpi ulnaris to integuments on the dorsum of the hand and the three inner fingers. 3. Superficial palmar branch divides into three digital branches, which supply the little finger and the ulnar edge of the ring finger. 4. Deep palmar branch form the deep palmar arch, and supplies the interossei muscles. *Musculo spiral*, or radial nerve. 1. Branches to the triceps. 2. Large or long cutaneous branch to the thumb. 3. Branches to the supinators and extensors. 4. Anterior or radial branch runs along the inner side of the supinator radii longus, which it supplies, and sends a branch to the integuments of the thumb, and another to the dorsum of the hand, supplying the index and middle fingers, and communicating with the dorsalis ulnaris. 5. Deep branch, or posterior interosseal, supplies by superficial and deep branches the extensor muscles. 1. *Circumflex, or articular nerve.* 1. Branches to the subscupular and adjacent muscles. 2. Principal distribution to the deltoid muscle.

Twelve pair of Dorsal Nerves.—Posterior branches are small, and pass backwards to the muscles and integuments of the back and loins. *Anterior branches, or Intercostals.* 1st is the largest; it contributes to the formation of the brachial plexus. 2nd 3d run backwards and outwards, and at the angle of the ribs pass between the intercostal muscles, and running along the lower edge of each rib, rapidly the surronnding muscles: opposite the axilla they send off the *nerves of Wrisberg*, or cutaneous nerves of the arm, and terminal branches to supply the muscles and skin upon the lateral and forepart of the thorax. 4th to 12th inclusive are similar to the 2d and 3d in distribution, supplying the intercostal and adjacent muscles: the two last go chiefly to the diaphragm, and the 12th sends a branch to join the first lumbar. [All the intercostals are connected by two short branches to the ganglions of the sympathetic.]

Five pair of Lumbar Nerves.—Thèy are larger than the dorsal, and like them divide into posterior and anterior branches. *Posterior branches* are distributed to the lumbar muscles. *Anterior branches* unite in the substance of the psoas muscle, to form the lumbar plexus.

Lnmbar Plexus.—External inguino-cutaneous. 1. Branches to the abdominal muscles 2 Cutaneous branch to the integuments on the outer part of the thigh. 3. External spermatic nerve. *Middle inguino-cutaneous* to the skin, on the outer part of the thigh. *Internal inguino-cutaneous.* 1. Branch to the spermatic chord, accompanying the spermatic vessels. 2. Branch to the integuments and glands of the groin. *Anterior crural nerve* formed by the four superior nerves, passes beneath Poupart's ligament, and divides into two fasciculi. 1. *Superficial fasciculus*—four or five long branches, which pierce the fascia lata, and

descend to the knee, some of them accompany the saphena vein. 2. *Deep fasciculus* sends *external muscular branches* to vastus internus, rectus, iliacus internus, and tensor vaginæ femoris, and internal muscular branches to the sartorius, vastus internus, and cruræus: branches accompanying the femoral artery, near to the knee, and the *internal saphenus nerve*, which joins the saphena vein at the knee, lying between the tendons of the gracilis and sartorius; this branch goes on to the inner side of the foot, sending off numerous branches to the integuments. *Obturator nerve* from the third lumbar. 1. Branches to the obturator internus. 2. Anterior branch to the adductor brevis, pectinæus, and vastus internus muscles. 3. Posterior branch to the gracilis adductor magnus and longus muscles. *Lumbo-sacral nerve* from the forth and fifth lumbar. 1. *Superior glutæal* to glutæus medius and minimus muscles. 2. *Communicating branch* to join the first sacral nerve. Five pair of sacral nerves. *Posterior branches* very small, to muscles and integuments. *Anterior branches* very large, particularly the three superior: these five, with the communicating branch of the lumbo-sacral, from the sacral plexus.

Sacral Plexus sends off internal or pelvic branches, which are named *Hæmorhoidal, Vesical, Uterine, Vaginal.* External branches. *Lesser sciatic nerve.* 1. Superficial branches pass over the hamstring muscles, with the posterior cutaneous nerve, and are lost in these muscles. 2. Deep branches go to the quadratus femoris, upper part of the adductor magnus, &c., also to the hip joint. *Inferior glutæal nerve,* to the glutæus maximus, perinænm, and the inner side of the thigh. *Posterior cutaneous nerve* to the back part of the thigh and leg. *Pudic nerve.* 1. Inferior branch to the muscles of the perinæum and to the scrotum. 2. Superior branch passes along the dorsum of the penis to the glans. *Great sciatic nerve,* or posterior crural. 1. *Cutaneous and muscular branches,* the latter to the hamstring, gracilis and adductor magnus muscles. 2. *External poplitæal,* or *peroneal nerve,* which sends off the *external cutaneous nerves* of the leg, two or three in number; these communicate with the external saphænus nerve. The *musculo-cutaneous nerve,* which sends branches to the integuments of the first and second toes, called *internal tarsal,* and branches to the integuments on the three outer called *external tarsal. Anterior tibial nerve,* which sends branches to the integuments, a branch to the extensor digitorum brevis, cutaneous and communicating branches, and the terminating branches to the first inter-osseal muscle, and then communicates with the plantar nerve. 3. *Internal popliteal,* or *posterior tibial* nerve. *Posterior* or *external saphenus.* Muscular branches to the gastrocnemius, solæus, plantaris, and deep muscles. Small filaments to the posterior and anterior tibial arteries. *Internal plantar nerve* which sends branches to the plantar muscles and skin, and the four digital branches to supply the 1st, 2d, 3d toes, and inner side of the 4th toe. External plantar nerve, which sends a superficial branch to the little toe and outer side of the 4th toe, and a deep branch to the plantar and interossei muscles.

SYMPATHETIC OR GANGLIONIC SYSTEM OF NERVES.

The sympathetic nerves communicate by their superior extremities with several of the cerebral nerves by fine filaments, also with all the spinal nerves; by one filament with each cervical, and by two filaments with each dorsal, lumbar, and sacral.

The Cervical Ganglions are three in number. *Superior cervical ganglion* extends from the first to the third cervical vertebra. 1. Ascending or superior branches are two; they ascend along with the carotid artery in the carotid canal to the cavernous sinus, where they communicate with the sixth or abducens nerve, and with the vidian nerve. 2. Descending or inferior branches are filaments which join the laryngeal and vagus nerves, the superior cardiac nerve, and the middle cervical ganglion, if it exists; if not, they join the inferior ganglion. 3. Internal branches unite with pharyngea plexus. 3. External branches join the superior cervical nerves. 5. Anterior branches from the vagus and facial nerves and form a plexus around the carotid artery, from which branches proceed along the external carotid and its divisions and are named accordingly. *Middle cervical ganglion* is sometimes absent. 1. Branches to unite with the vagus and cervical nerves. 2. Branches to join the cardiac nerves. *Inferior cervical ganglion* is situated between the transverse process of the last cervical vertebra and the neck of the first rib. 1. Branches to phrenic nerve, brachial plexus, subclavian

rtery, and its branches. 2. Branches to he inferior cardiac nerve.

Cardiac Nerves are three in number, nd are named, superior, middle, and nferior. 1. Superior Cardiac Nerves rise by two or three filaments from the uperior cervical ganglion, communicate vith the vagus and laryngeal nerves, and vith the middle and inferior cervical anglia, pass along the coats of the arteria nnominata on the right side, and between he left carotid and left subclavian on the eft side to the aorta, and here communiate with the recurrent nerves, the middle nd inferior cardiac nerves, and the cardiac ganglion or plexus. 2. Middle Cardiac Nerves. That of the right side is generally the largest; on the left side it is something wanting. They enter the horax anterior to the subclavian artery, are joined by branches from the vagus and recurrent nerves, and, passing along the rteria innominata, terminate in the cardiac ganglion and plexus. 3. Inferior Cardiac Branches. The right descend along the arteria innominata to the forepart of the arch of the aorta, and terminate in the anterior cardiac plexus: some branches pass between the aorta and pulmonary artery to the cardiac ganglion; on the left these nerves accompany the subclavian artery, and partly join the middle cardiac nerve, and partly the cardiac plexus.

Cardiac Plexus. or Cardiac Ganglion, is situated behind the ascending aorta, near its origin, in front of the trachea and right pulmonary artery; it consists of a plexus of nerves formed by the cardiac nerves of the opposite sides and branches of the eighth pair and recurrent. In the meshes of this plexus several small ganglions are enclosed, and to these conjointly the term cardiac ganglion is applied. Branches proceed from this plexus to the coronary and pulmonary vessels to the aorta and vena cava, and to the substance of the heart itself.

Thoracic Ganglions are twelve on each side, sometimes only eleven, the last cervical and first dorsal being united. 1. Branches to the mediastinum, which ramify on the aorta and adjacent vessels, and communicate with the pulmonary plexus. 2. Great Splanchnic nerve is formed by distinct roots, from the 6th, 7th, 8th, 9th, and 10th ganglions, which unite on the 10th dorsal vertebra into one chord, which chord, entering the abdomen along with the aorta, or separated from it by a fasciculus of the diaphragm, expands into the semilunar ganglion. 3. Lesser Splanchnic Nerve arises by two roots from the 10th and 11th ganglions, and uniting on the side of the last dorsal vertebra, enters the abdomen through the crus of the diaphragm, and ends in the renal plexus.

Semilunar Ganglia are situated on the diaphragm, partly on the aorta, and on either side of the cœliac axis, and above and behind the supra-renal capsule. They are the largest ganglia of the sympathetic; several nervous filaments, on which small ganglia are placed, pass from one to the other surrounding the cœliac axis, forming a plexus, called

Solar Plexus is situated behind the stomach, above the pancreas, and in front of the aorta. 1. Branches in various directions, accompanying the blood-vessels, forming plexuses around each, and named accordingly, as hepatic, splenic, and gastric, and these communicate with the eighth pair. 2. Branches descending in front of the aorta, which subdivide at the renal and mesenteric arteries, accompanying them, and forming plexuses, named accordingly, viz.; renal, superior and inferior mesenteric, and into each of these branches of the lumbar ganglions enter.

Renal Plexus receives the lesser splanchnic nerves; from it descends 1. Spermatic Plexus, which goes to the testicle in the male and to the ovarium and uterus in the female.

Inferior Mesenteric Plexus sends branches which descend to the brim of the pelvis, unite with others from the lumbar ganglions, and form a plexus around the internal iliac artery and its branches, named hypogastric plexus. It is joined by numerous filaments from the lumbar and sacral ganglions of the sympathetic, and communicates with the pelvic branches of the sacral plexus.

Lumbar Ganglions are five on each side, sometimes only three or four. 1. Branches to anterior branches of lumbar spinal nerves. 2. Branches to assist in forming the several abdominal plexuses.

Sacral Ganglions are three or four in number. 1. Branches to sacral nerves. 2. Filaments to hypogastric and pelvic plexuses. 3. A small branch from the last ganglion, which passes in front of the coccyx, there forming with its fellow the

Ganglion Impar, which sends branches to the coccygæus, levator, and sphincter ani muscles. The Gasserian, Meckel's, Lenticular, Naso-palatine, and Submaxillary Ganglions are described in connection with the fifth pair of Cerebral Nerves, and its ramifications.

The London Medical
AND
Surgical Journal.
Saturday, June 24th, 1837.

THE METROPOLITAN UNIVERSITY.

When the Chancellor of the Exchequer was employed in framing the New University, he exhibited no small degree of acumen, by offering a place in the Senate to certain of the most celebrated corruptionists, who, as public functionaries, he well knew, durst not accept of an office in the new institution; whilst he, at the same time, elected some of their zealous representatives, taking special care that the number of these should be so insignificant, that they should be quite incapable of frustrating the great objects of the University, or of passing by-laws that would in any way prevent the disturbance of the old ladies of the antiquated nunnery in Pall Mall East, or of the ancient monks of Lincoln's Inn Fields. Already have these imbecile representatives of the monopolists been signally defeated on two important points,—not only has Dr. Peter Mark Roget, with his three *enlightened* companions, the Doctor of Laws and the two naval tacticians, been defeated in their contemptible project of establishing SECRET COMMITTEES, the purport of which was too obvious, and what was anticipated by the Chancellor of the Exchequer from such individuals But this QUADRUPLE ALLIANCE has also met with a severe defeat in not being able to appoint, after all their endeavours, that individual to fill the office of REGISTRAR, who from his well known adhesion to the "great cause," would have been a most useful coadjutor. Finding there was no chance of an annual sum of 1,000*l.* being extracted from the Treasury chest as stipend for a REGISTRAR, Dr. Forbes of Chichester had the sagacity to withdraw his name from amongst the Candidates; and we cannot help expressing the opinion, already advanced, that the Doctor's great and scientific talents would be better employed in editing his valuable Quarterly, and his acoustic tact devoted to stethoscopic investigations.

Neither has Mr. Warburton been able to carry *his* projected appointment into effect, so that our anatomical teachers will not be deprived of the admirable working of the Anatomy Bill, and the rigid justice in the distribution of subjects so characteristic of the present INSPECTOR OF ANATOMY. Whilst, therefore, there is just cause to rejoice in the defeat of personal objects and intrigues, which have hitherto been attempted in the Metropolitan University, we feel pleasure in stating, that a CLERK has been appointed, with an income of 200*l.* a year, to perform the manifold duties which were supposed to be required of a Registrar, the most important of which it is intended should devolve on the Senate themselves. How the Members of the Senate are to be remunerated for these arduous and no less laborious duties, we know not; but of this we are certain, that propriety and justice demand that they should receive salaries proportionate to the duties which may be imposed upon them.

DEATH OF THE KING.

(From our Windsor Correspondent.)

The forewarnings I communicated to you with respect to the ordinary bulletins have been too truly realized, in the demise of his late Majesty. The state of anxiety which prevailed amongst all classes at Windsor during yesterday,

(Monday) showed the little dependence placed on the official bulletins, from which, as usual, no information whatever could be derived. It is but justice, however to the medical attendants to state, that this last ten days sojourn in this world can only be attributed to the judicious manner in which stimulants of the various kinds were administered. It has been generally reported by one party here, that the last few days of his Majesty's life were embittered by sufferings of no ordinary description; but the very contrary, you may depend upon, was the fact. Indeed, when the state of his Majesty's circulation is considered with the collateral circumstances, it would furnish a singular anomaly in the annals of medicine.

The moment arrangements are made for the embalmment to take place, with all other particulars, I shall apprise you.

I regret to state, that from the great anxiety which his royal consort has suffered, she requires the constant attendance of her medical advisers.

MEDICAL CHARITIES BILL FOR IRELAND.

Since it was announced early last winter that it was Lord Morpeth's intention to introduce a bill for the better regulation of the Medical Charities of Ireland, we have been exceedingly anxious to learn what such a bill should be, and how far in principle, and in practice, it may be likely to answer the expectations of the profession and of the public. In the two last numbers of this Journal, we gave the expected bill; and will now state our opinions respecting it, and enter at some length into the subject of medical relief for the sick poor of that country.

In doing so, we enter on the entire question differently from any of our fellow journalists—we have practised much and long in Ireland, and happen to be well conversant with the different classes of medical charites in that country—we therefore are enabled to discuss the subject *practically*. And as we happen to be now so circumstanced as to have no direct or indirect interest in it, beyond that which we feel as members of a profession which is likely to be greatly affected by such an enactment, and as members of society anxiously alive to the passing of any measures which are intended for the relief of the sick poor of that fine but still much distressed country, our observations will, it is to be hoped, be received without any of that distrust which local or other interests might possibly create in the minds of many.

To enable our readers to fully understand this interesting subject, it is necessary that we should briefly state what means exist in Ireland at present to afford gratuitous medical aid to its numerous sick poor.

The grand jury of each county, city, or town, is authorized to make an annual presentment to the Infirmary of such county, and to give £100. a year to the surgeon. It is not compulsory on them to do so, but in general from £400 to £600 is granted. This, aided by subscriptions, supplies infimary aid to about 10,000 interns annually in all the counties in Ireland, the City of Dublin alone excepted. The externs attended by these county hospitals are supposed to amount to 170 or 180,000. The annual expenditure is about £27,000 for the thirty-six institutions of this class. The grand juries are authorized to present a sum double the amount of subscriptions for fever hospitals, of which there are in all seventy. The sum total expended on them is about 728,000 a year, and the

number admitted, including the Dublin fever hospitals, about 23,000, of which number above 7,000 enter the latter. It is not legal to apply any funds obtained for fever hospitals for the support of any but cases of supposed contagion.

Grand juries are authorized and *required* to present for Dispensaries a sum equal to the subscriptions. The number of these Institutions is about 482; the sum annually expended on them is about £60,000 a year. The number of patients annually attended by them is above one million.

The funds for District Lunatic Asylums are compulsory, and are advanced by government and repaid by the counties; they amount to about £30,000 a year; the number of patients annually admitted is not stated.

By this it will be observed that there is one Infirmary in each county, supported chiefly by county rates and partly by subscriptions; that Lunatic Asylums are maintained entirely at the expense of a similar rate. Both these classes of charities are therefore provided with certain funds; but those for Fever Hospitals and Dispensaries are entirely dependent on subscriptions; and when the latter fail, there can be no funds for either.

The defects of such legislation are but too apparent, and they are extensively felt. First, as regards county Infirmaries, the whole county is taxed for one institution, whose advantages are found to extend only a few miles around it;* and those requiring infirmary aid are, on that account, as well as from other causes, viz., insufficiency of funds, and want of sufficient room in these infirmaries, unable to obtain it.

This evil might be greatly remedied were the Governors of any Fever Hospital, which is above ten miles distant from the County Infirmary, empowered to use such hospital *partly* for infirmary purposes.

The defective state of the laws regarding Fever Hospitals and Dispensaries is lamentable to contemplate in such a country as Ireland, where want and disease are so general and so frequent. Its consequences are stated by the Irish Poor Inquiry Commissioners (second report, page 4), to be, that "Medical relief at present afforded throughout Ireland is very unequally distributed," "in districts where there are many rich resident proprietors a medical charity (Fever Hospital or Dispensary) is perhaps least wanted, but a subscription most easily obtained; in districts where there are few or no resident proprietors the aid is most necessary, but there are no subscribers, *and consequently there is no medical charity.*"

In proof of this opinion the Commissioners observe, "In the county of Dublin there are twenty-four Dispensaries for 176,000 inhabitants, or one for every 7,333. In Meath, nineteen Dispensaries for 176,800, or one for every 9,306 inhabitants," but "in the county of Mayo, containing 366,328 inhabitants, *there is only one Dispensary supported at the public expense.*"

We beg leave to give a short table to further prove this opinion,—the town of Galway has one Dispensary for a population of 40,000, *and only one medical attendant;* the county of Monaghan has one for every 26,500 of the population; Down one for 29,000; Longford one for 28,000; Kerry one for 23,000; Fermanagh one for 21,400; Antrim one for 21,100; Roscommon one for 20,000; Galway one for 200,000; Armagh one for 18,300; Sligo one for 19,000; Tyrone

* See Phelan's Enquiry into the defects and abuses of the medical charities of Ireland, second and sixth statistical tables.

one for 18,000; Londonderry one for 17,000.

This shows that the medical charities are very unequally distributed; but it shows much more, that many of those which now exist, must be very inadequate to afford the sick poor of their respective districts the necessary relief. It is a fact universally admitted, that one medical man cannot possibly attend a greater number of sick poor, than a population of from 10,000 to 12,000 usually produces. Now there is, *generally*, but one prescriber for each rural Dispensary in Ireland—where there is an apothecary he rarely visits, but merely compounds and gives out medicines, and as the population of the above twelve counties amounts to 2,975,000, it would require from 250 to 300 Dispensary attendants to attend the sick poor sufficiently—in place of 136 which is about the number now engaged—each district on an average now containing above 21,000 persons, and many of them of such extent as to render it physically impossible for one person to attend perhaps one-half of the sick poor.

Let us now examine twelve other counties, viz., Carlow, Dublin, Kildare, Kilkenny, King's & Queen's counties, Louth, Meath, Westmeath, Wexford, Wicklow and Limerick, which contain a population of 1,794,000, and in which there are 160 Dispensaries, or one to every 11,200 persons. If the number of medical officers attending these be only sufficient, surely in the case of the other counties the defect must be very great. The fact, we believe to be in a few instances, Dispensaries are too near each other; but in other parts of the same counties, and in most instances, they are by far too remote.

Now with regard to Fever Hospital aid—a matter on which the legislature has always laid great stress, and very justly—in a country where fever so much and so often prevails. In Leinster and Munster there are sixty Fever Hospitals, viz. twenty-nine in the former, and thirty-one in the latter; whilst Ulster and Connaught contain only ten, seven in the former and three in the latter. Four counties, Cork, Tipperary, Wexford, and Wicklow, with a population of only 1,516,000, have twenty-eight, or one to every 54,000 persons; whilst the remainder of Ireland has only forty-two, or one to every 154,000. *Eleven counties contain only one each, and some of these but very small, and seven have yet no Fever Hospital.*

These facts, which we have collected from Surgeon Phelan's valuable work—"An Inquiry into the Defects and Abuses of the Medical Charities of Ireland," and from Appendix B. of the Irish Poor Commissioners Inquiry, being the evidence and report of the four medical gentlemen employed to inspect these institutions, are decisive evidence of the Medical Charities of Ireland being quite insufficient to supply the sick poor with medical aid.

We are aware that since the publication of the above works, the first in 1835, the latter in 1836, a few, and but very few, fever hospitals have been established; but, on the other hand, it is well known that the funds for many of this class, as well as for several dispensaries, have diminished considerably.

The Irish Poor Enquiry Commissioners might then well observe that "The Medical relief at present afforded throughout Ireland is very unequally distributed, and requires considerable alteration;" a subject which we shall consider fully in an early number.

HUMAN LIFE AND THE TABLES OF MORTALITY.

It would only be repeating an acknowledged truth, to say that human life is uncertain, and that its duration varies, according to the age and circumstances of the life proposed. But although age may in some measure denote the value of life, it does not necessarily follow that an equality in age will produce an equality in the duration of existence. There are very few of our readers who could not select, from the circle of their own acquaintance, many who, with equal ages, have by no means an equal prospect of seeing the commencement of another year. During the Patriarchal ages, before the follies and intemperance of mankind had spread disease and its consequent miseries, age might perhaps with propriety have been adopted as the standard measure of longevity; but of later years it has only served to measure out the portion of existence due to mankind collectively. The life of man may terminate at any period between birth and the extremity of old age, and although it would be extremely difficult to assign the exact period at which the dissolution of a single individual might be expected to occur, yet it is by no means so difficult a task to portion out the number of years due to a large mass or body of mankind. The progress of population and the waste of life, have long since been found to be regulated by an absolute and almost unerring law. It is not indeeed pretended that the action of this law is everywhere the same. It would be the extreme of folly, to suppose that the duration of existence is the same amongst all nations, and in all climates, at all periods, and among all classes of society; a thousand causes interfere either to increase or diminish the mortality of particular places, and particular periods. Some countries are scourged by periodical endemics, and some periods are marked by scarcity and famine. The waste of life is greater among people who arrive early at maturity, than it is among those in whom maturity is backward. It is for this reason that the natives and inhabitants of warm climates, who are, as it were, forced into premature perfection, seldom or ever reach the extremity of life; nor do we want evidence to show that the waste of life is sensibly affected by the comparative scarcity or abundance of provision. Every material rise in the price of food, is invariably attended by a corresponding decrease in the number of the yearly births, by an increase in the sickness, and by an excess in the mortality of that year; but, with all this apparent fickleness of nature to contend with, our statists have traced the mortality of the different countries and classes of mankind, with an exactness and regularity which is scarcely credible.

The constitution and arrangement of the human frame, however perfect it may originally have been, intimate that it was not formed to continue in healthy action, or to perform with regularity its various functions, for a longer period than seventy or eighty years. From constitutional defects or hereditary weakness,—from intemperance, self-indulgence or folly.—a certain number of every generation fall sick, and of these a certain number annually die, at every age, but in such a manner and by such a law, that the rate of mortality gradually diminishes from birth to puberty, and is from that period gradually accelerated until the extremity of life. Life may, indeed, be said to be divided into three distinct periods or eras, namely:—The period from infancy to puberty, or the commencement of manhood; from and during manhood to the commeneement of old age; and from the beginning of that era to the termination of existence. During infancy life is exceedingly precarious, and the mortality of that season far exceeds the mortality of a middle age. This is in a great measure owing to the delicacy of the human frame at this very tender age, and to the fatality of the numerous disorders which infect childhood in its very early states. The period of manhood is marked by a certain but a slow decay, while from old age to death, the velocity of mortality is extremely great. In these papers it will be our object to confine our inquiries to the observations which have been made on the duration of life in our own country, and among our own people. and to the use which has been made of the materials collected in the construction of the various tables of mortality by which the life offices regulate their charges.

The observations, upon the accuracy of which the law of mortality in this kingdom depends, have been chiefly drawn from the examination of the parish registers of different cities, towns, and villages, and from the population and other returns made to Parliament. Other and very different sources have been examined, and have been found to produce data, in some

cases, superior to that procured from the registers of even the oldest parishes. We shall, in the course of this paper, allude to the various sources which have provided data for these enquiries, but we cannot promise more than a very brief sketch of the subject, and a short but succinct account of the three or four principal tables which have been constructed upon the materials furnished by the British empire.

The first important, and the oldest, of these tables, was formed by the celebrated Dr. Price, from the parish registers of the town of Northampton, a small central and healthy borough town, which in itself combines many of the advantages of both town and country. We shall not be able in this place to give a detailed account of the method pursued by Dr. Price in forming this table, the tabular numbers of which are, of course, wholly artificial, and have been produced by a series of mathematical assumptions, but the ground-work of it is substantially correct, and founded upon real observations It is not to speak too favourably of this table, to say, that frequent use and subsequent experience have concurred in rendering testimony to its value and accuracy, especially in the latter stages of existence. In its tabular form it consists of 11,650 individuals, who are traced from birth to the termination of existence, which, according to this table, is at the age of ninety-six years. The numbers dying in each year are noted, and, consequently, the number surviving to commence the ensuing year. In its form it is as follows:—

Age.	No. Born and Living at the Commencement of each Year.	No. Dying each Yr.
At Birth	11650	3000
At 1 year	8650	1367
„ 2 years	7283	502
„ 3 „	6781	335
„ 4 „	6446	197
„ 5 „	6249	184

From an examination of the above specimen, the nature of these tables will be made apparent; it commences with the birth of 11,650 children, out of which number 3000 are supposed to die the first year, so that the total number of survivors who complete their first, and who enter upon the second year of their age, are equal to 8650; out of this number 1367 die during the second year, leaving 7283 to *complete* the age of two years, and so on. The numbers in the first column all along represent the survivors who enter upon every new year; and the numbers in the second column, those who annually die, when the table is carried on to the extremity of life. The total number of deaths (the sum of the second column,) is always equal to the number originally born; and the sum of the first column, or those living at every age, may be said to represent the population of the table, so that had the numbers in the table been real instead of artificial products, that is, had they been equal to the numbers actually living and dying in the town of Northampton, the population in the table would have represented the real contemporaneous population within the walls at the commencement of every year. It will, however, be seen from this, that such an hypothesis is founded on supposition that the population of the town has remained quite stationary for a long series of years, as there is no allowance made for the admission of new settlers or for an efflux by emigration. But the construction and uses of this table will be better explained and more fully understood, when we come to determine from it the probabilities of existence. Although this table has been, until very recently, the one adopted by Government as the basis of its annuity system, and by almost all the principal assurance societies, yet an opinion has lately got abroad, that it gives the mortality of the ages too high, and is consequently too unfavourable to the duration of human life. This opinion, which is almost universally entertained, owes its origin to the fancied improvement which has taken place in the condition of the national health, an improvement supposed to have been produced by the co-operation of several causes, among the most prominent of which we may venture to place the very general introduction of vaccination, and the consequent extirpation of that dreadful malady, the small-pox. How far this opinion is supported by experience, it will presently be our business to examine.

The table next in estimation to the Northampton, is one formed by the ingenious Mr. Milne, upon a series of observations made by Dr. Heysham, on the mortality of the city of Carlisle. It is in its nature, properties, and general arrangement, similar to the Northampton, but in its arithmetical results it differs widely from its rival table. It gives a rate or velocity of mortality considerably *less* than the Northampton, and consequently supposes life of greater value. It terminates existence at the advanced age of one hundred and four years. The propriety of

adopting so extreme an age may very well be doubted; for although some extraordinary instances have occurred of individuals reaching ages even beyond this, yet they have been so few in number, and are of such rare occurrence, and so unsupported by credible testimony, that it is scarcely prudent to protract a table which is intended for general use, to ages beyond one hundred years.

A very extensive series of tables have been constructed by Mr. Finlaison, the state actuary, from his own observations on the national life annuitants and Government tontines; but of their value, or of the accuracy with which they have been done, we are not prepared to speak, as we have been nowhere furnished with a clear statement of the materials he has collected, nor of the manner in which those materials were used, A considerable number of these tables, with their monied values, have been published by Mr. Finlaison in a Parliamentary paper or report upon the subject of life annuities.

A much more valuable and important addition has, however, been made to the statistical literature of the kingdom, by a publication of the Equitable Society in the year 1834, consisting of a singularly clear and accurate record of the rate of mortality among its members. It is accompanied by a curious and really interesting nosological table, which cannot fail to throw considerable light upon the doctrine of vital statistics, and which exhibits the proportion in which the different disorders prevail amongst mankind at different ages, in a very exact and curious manner,—added to which, Mr. Morgan, the compiler of these tables, has, at the expense of considerable labour to himself, furnished us with the rough materials from which his various conclusions have been drawn. The Equitable Assurance Society, one of the oldest of its kind, was first established in the year 1762, and these tables are brought down as far as the year 1829; in fact, going over an actual period of upwards of sixty years. The materials given in this publication, consist of the real numbers living, dying, and withdrawing from the society; but they have been very ingeniously adapted by Mr. Morgan, in the two tables which he has constructed, to an artificial radix, in order to simplify their arithmetical results. It is a curious circumstance, that these tables in their older ages approximate very nearly to the Northampton, and, indeed, in some instances, the mortality of the Equitable is in excess; doubtless, when the experience of a few more years shall be added to the data of which we are already in possession, a greater similarity will be found to exist between these tables.

It must be remembered, that in the Equitable Society every assurer is selected from a mass of chosen lives in the middling and upper ranks. This may, in a great measure, account for the diminution of mortality during the early ages, and is in reality a still further proof of the exceeding accuracy with which the Northampton table represents the mortality of a mixed population. In addition to the tables already named, there are several others of great value, formed from observations on the rate of mortality amongst particular classes, in our own and foreign countries. Of late years, inquiries into these subjects have been much extended, and to that circumstance we owe our knowledge of a difference which has been found to exist in the relative values of male and female life. We must, however be satisfied with very briefly noticing the subject, as it would occupy too considerable a portion of our space and time, to investigate it as fully as it deserves. The rate of this difference has, of course, been very differently estimated; but, in round numbers, we may say that the value of female life exceeds that of male life, in the proportion of about eleven to ten. Some of the Assurance Societies, overrating the importance of this difference, have made a distinction in their charges for the assurance of the life of a male and a female. But in most offices, the number of assurances which are effected upon the lives of women are so few, that it is scarcely safe, and certainly not worth while to make the distinction.

FOUR CASES OF POLYPUS CURED BY LIGATURE.

Two or Three being Reported and Condensed, by Mr. Henry Oldham.

Case I.

Elizabeth H——, aged forty-four, was admitted into Mary's Ward, in April 1833, under Dr. Ashwell. She is an unmarried woman, and has usually enjoyed good health. This was interfered with three years ago, by a profuse flow of the catamenia; succeeded by such irregularities in the performance of the function

as to induce the persuasion that it was about to cease.

These passive hæmorrhages were sometimes very copious; and not unfrequently a pint has been expelled at one gush The character of this discharge changed about two years since, and assumed the appearance of coffee-grounds; becoming also more regular in its recurrence, and very offensive. This last peculiarity, however, was not constant: in the absence of a red discharge, there was one of a mucous kind.

She now complains of great lumbar pain, extending to the sacrum, with rigors, on the accession of and going off of the sanguineous discharge. There is no bearing down, nor pain on micturition; but she occasionally feels a mechanical obstacle to the free exit of the urine. She experiences a sensation of fulness about the vagina, and a distressing sense of weakness on making any exertion. Her countenance and general surface are exsanguine; and though not absolutely emaciated, yet the flabby condition of her muscles indicates imperfect nutrition. The cerebral symptoms consequent on hæmorrhage are present, and the legs and ankles are œdematous at night. Dr. Ashwell examined, and entered the following report:

"I find a polypus attached to the fundus, about the size of a large hen's egg. The finger easily encircles its peduncle within the cavity of the uterine neck, and it extends half way down the vagina. Its structure is firm, and insensible to the scratch of a pin."

She was ordered to take tonics, and to maintain the recumbent posture; and in a few days, the polypus was noosed by ligature. The double canula was the instrument employed, furnished with a piece of whip-cord of suitable length and thickness. The patient was placed at the edge of the bed, in the usual obstetric position. The fore-finger of the left hand was passed over the enlarged portion of the polypus within the vagina, resting a little below the cervix. The canula was thus directed to the spot, and one of the tubes was carried round the polypus; and on regaining its fellow, was adjusted within the receiving tubes. The ligature thus applied was then tightened, and its free extremities twisted round the shoulders of the instrument. The patient did not complain of the slightest pain, but spoke of an obscure feeling of strangulation in the part. The ligature was daily tightened; and the vagina was occasionally washed out with warm water. The polypus was separated, and came away with the instrument on the eighth day after the operation, appearing much diminished in size.

From the time the ligature was applied, there was no further discharge. The patient daily improved; and she was shortly presented, cured.

Case II.

Jane J——, aged forty-seven, a single woman, of slim make, whose aspect and sunken features conveyed the external symptoms of malignant disease, was admitted into the hospital, under Dr. Ashwell, in August 1834.

Her health has generally been feeble; but, with the exception of several hysterical symptoms, it did not materially suffer until three years since: at this time, the catamenia, which had hitherto flowed naturally, became very profuse, lasting twelve or fourteen days, and attended by clots. A copious purulent and very fetid discharge succeeded this passive hæmorrhage, and alternated with the menstrual flow. With the exception of rather too profuse menstruation, she did not suffer from hæmorrhage during the growth of the polypus; but her present attenuated and very weakened state seems attributable to the purulent discharge, which continues unabated.

An examination was instituted by Dr. Ashwell, who reported:

"I find the vagina completely filled up by an insensible pyriform body, which almost protrudes through the external labia. The growth is encircled by the os uteri; but the finger can pass between them, excepting at the posterior part of the interior of the cervix, where the polypus is attached; and here the os is attenuated."

The bowels were regulated; and sulphate of quinine, in the compound infusion of roses, was administered. On the 27th of August, the polypus was tied; and when the ligature was tightened, the patient did not complain of pain. In the evening there was some abdominal tenderness, which probably arose from a distended bladder. The catheter was passed, and an opiate administered. She experienced no further suffering: the ligature was tightened daily; and on the 5th of September, nine days from the operation, the polypus was cut through, and with some difficulty, owing to the smallness of the vagina, withdrawn. It is worthy of remark, that the discharge ceased after

the polypus was tied, nor has it since recurred. Her general health rapidly improved; and she soon left the hospital, cured.

Case III.

Mary Anne W——, aged thirty-five, the mother of three children, but now a widow, has been suffering the last two and a half years, from uterine hæmorrhage. This occurred, without any premonitory symptoms, in profusion; but has since been diminished in quantity, but constant. She is now the subject of anæmia; the surface being uniformly blanched; and her general health has been daily declining.

On examination a polypus was discovered, just protruding through the os, insensible to pressure. It was probably attached to the body of the uterus, as the finger could be passed round the cervix.

The loss of blood, which this patient was daily sustaining, determined Dr Ashwell to attempt to strangulate the polypus; but its very slight descent, and the unusual length of the vagina, frustrated the endeavour. On the evening of the same day, flooding occurred; the pulse was almost imperceptible at the wrist; the pupils contracted, and she appeared comatose. Active measures were employed to arrest the hæmorrhage; which was accomplished by plugging the vagina. She gradually recovered from this attack, and a longer instrument having been procured, the polypus was tied on the 4th of October.

No further hæmorrhage occurred, nor did the patient experience any pain, and on the eighth (four days after the operation) the polypus was cut through. This woman regained her former health and spirits, and left the Hospital quite well.

Case IV.

Georgiana W——, aged thirty-four, was admitted Oct. 23, 1834. She is a delicate strumous woman, and was delivered of a six-months' child, ten months ago. For the last two years she had been supposed to labour under menorrhagia, and every variety of treatment had been employed without success. To arrest the hæmorrhage, she attended as an out patient at the Hospital, and the secale cornutum was administered, but as the discharge continued, she was examined. A large polypoid growth was discovered, partly protruding into the vagina, but encircled by the os and cervix, the former of which was exceedingly attenuated. Scruple doses, repeated three times, of the secale cornutum were administered, with the hope of procuring a further protrusion of the polypus, and its release from the embrace of the os and cervix. This had the desired effect, and Dr. Ashwell tied it without difficulty. The catheter was passed for two days after the operation, which was not accompanied or succeeded by pain. Warm water injections were used during the separation of the polypus, which was accomplished in eight days' time. This patient recovered without a bad symptom.

Remarks.

Of late, the opinion has been adopted by some eminent pathologists, that uterine polypi and hard or fibrous tumours of the uterus are nearly identical. I am disposed to believe that there are, occasionally, points of similarity, especially between large, old, and condensed polypi and these tumors; but it is erroneous to view this similarity as at all complete, or universally existing.

In *structure*, there is rarely as much induration and closeness of texture in the polypus as in the fibrous and fleshy tumor: in the latter there are generally to be found the white membranous lines transversing the tumor in every direction, and a hardness; forming together the diagnosis of scirrhus from other diseases. In the majority of polypi, with the exceptions stated above, there is a looseness, softness, and vascularity, clearly diagnostic of a different organization.

In *sensibility*, there is little resemblance between the two diseases; for while in the genuine uterine polypi, with scarcely an exception, there is an entire absence of sensation the hard tumor is by no means bereft of this property. A needle may be pushed into the former growth without exciting pain, but not so in the fleshy tubercle. One of the best distinctive marks of a polypus, is certainly its sensibility.

In *vascularity*, there is a wide difference. It is rare to meet with a large tumor that bleeds, while it is certainly very uncommon to discover a polypus from which the hæmorrhage is not frequent, and sometimes large and alarming. In a late volume of the Medico-Chirurgical Transactions, Mr. Langstaff adduces an instance where a patient lost her life from the repeated bleedings of an undiscovered uterine polypus. Nor are such occurrences rare.

In *locality*, they generally differ widely The hard tumor most frequently grows externally, seldom encroaching on the cavity of the uterus. Allowing, what is perhaps true, that they have a common seat of origin, probably in the muscular tissue—while the tumor proceeds towards the walls, and, by its growth and bulk, mechanically interferes with the abdominal viscera—the polypus distends the mucous lining, and, whatever size it may attain, it continues to be invested by an increased growth of the same tissue Thus in the majority of tumors, the peritoneum, a serous membrane, will form the external tunic, whilst the polypus is entirely covered by mucous membrane.

The *morbid processes* attendant on their progress are not similar: the tumor, when it destroys life, which is not common, does so by irritation of the system generally, and by inflammation and ulceration of proximate organs; rarely by ulceration in its own structure. The polypus, on the contrary, if undiscovered or neglected, induces a fatal result, most commonly by hæmorrhage, from vessels pouring out blood from its surface; and, occasionally, ulceration is present also.

The cases prefixed to these observations are not devoid of interest. In all, an examination had been neglected, till the symptoms were so urgent as to forbid further delay; so that unnecessary loss of blood, and to an injurious and alarming extent, was the result of this great practical error. In one instance there was no hæmorrhage, but a constant secretion of pus: nor does it appear that such a process was better supported than loss of blood; for J—— was more anæmiated, and had more of the malignant aspect, than any of the other patients Excepting (in No. 8) where the polypus had only partially emerged from the uterine cavity, there was no difficulty in the operation; and even there, a longer instrument rendered the noosing of the growth easy and safe. In none of the women were there any after-symptoms, inducing solicitude or risk. In all, the hæmorrhage ceased immediately on the tightening of the ligature; nor did it again occur;—a tolerably good proof that the hæmorrhage arises from the growth, and not from the uterus;—a fact receiving additional corroboration from the attempt, by Mr Sisbon and myself, to inject a polypus, an account of which, with a drawing of a section of the growth, is subjoined.

Two of the four women were single; a third had borne three children, and the fourth, although long married, had never been pregnant.

It is scarcely necessary to say, that, in common with English practitioners, I prefer the ligature to the knife in the excision of polypi. I once removed a small polypus by the latter method, and the hæmorrhage was alarming, requiring the plugging of the vagina for its restraint. There are two preparations in Guy's Museum, of small polypi removed by incision; and it is recorded, that the hæmorrhage was extensive. This risk is avoided by the ligature, and in none of the numerous instances where I have used it, has there been any bleeding on the separation of the growth. No case has yet come to my knowledge of polypus occurring a second time in the same individual.

AN ACCOUNT OF THE POLYPUS INJECTED AND EXAMINED BY MR. SIBSON AND DR. ASHWELL.

When first received, the polypus was exceedingly soft and pulpy, from putrefaction. By means of a blow-pipe, vessels running on the surface were inflated; but from the pulpiness of the mass, it was impossible to insert an injecting-pipe. Mercury was, however, thrown into the vessels, but when it had run for a very short distance, a vessel into which it had entered, and whose calibre it was distending, gave way; and although its further escape was arrested by gentle pressure, the injecting being continued, the mercury again burst forth at an adjoining part.

The polypus was now immersed in weak spirit for several days, and its consistence was then rendered much firmer. Mercury was again thrown in, by the pressure of a few inches of its own column, and although a great quantity escaped by the vessels terminating on the surface, yet a considerable number were filled.

The growth was rendered transparent by drying, that the injected vessels might be more easily distinguished. During the process, much of the mercury was necessarily driven out, through the numerous apertures on its surface. A section of polypus was then made, that the comparative vascularity of the surface and substance might be better observed.

The superficial vessels, which presented numerous anastomoses, varied in size, from a dimension little larger than a hog's bristle to that of crow-quill. They ran

in various directions, some of them having a convoluted appearance.

At the centre of the polypus there was a vessel, which originated in the pedunicle, and ran in a straight direction for about an inch; when it had reached the bulb of the polypus, it became extremely tortuous in its course: it was about the size of a large crow-quill. There were several smaller vessels in the substance of the tumor.

PURULENT DISCHARGE FROM THE LINING MEMBRANE OF THE UTERUS.

Reported by Mr. Joseph Ridge.

Marianne B——, aged 19, of florid complexion, ordinary stature, and sanguineous temperament, was admitted in July 1836, into Petersham Ward. She had been in service, and had enjoyed good health, until eleven weeks since, when she began to complain of uneasiness in the hypogastric region, with severe pain in the right groin, increased towards night. This was accompanied with a thick, yellow, and very fetid vaginal discharge, which has continued up to the present time. The catamenia have not been arrested; and they appeared a fortnight before her admission.

Her general health has suffered: she feels weak, and indisposed to exertion. There is a profuse purulent secretion, which comes on at intervals, especially after exertion. On getting out of bed, or in endeavouring to evacuate the bladder or rectum, it passes per vaginam, by gushes, being preceded by a cessation for some hours. Occasionally, it continues for two or three days together; and then ceases, until its accumulation is relieved by a sudden flow. She has lumbar pain, and occasionally a distressing sense of fulness and bearing-down in the uterine region. Sometimes the pains are severe and lancinating, extending to the pubes and groins: bowels costive: tongue slightly furred: pulse rather full, and moderate.

These symptoms continued for several weeks, but with partial amelioration. The purulent secretion was, at intervals, diminished; but soon afterwards recurred, in equal quantity. She passed over two catamenial periods; and the discharge appeared to be intimately mixed with the sanguineous flow. Some shreds of membrane were discovered, being preceded by more than usual pain.

The treatment consisted in the exhibition of laxatives, with occasional topical bleeding, and sedatives to allay constitutional irritation. An opium suppository was used, with a belladonna plaster to the loins. Injections of an astringent kind, variously modified, with the hip-bath, were employed, but with little advantage.

The obstinacy of the disease, and the marked debility accompanying it, determined Dr. Ashwell to inject the cavity of the uterus with tepid water. This was effected by introducing a gum-elastic catheter with an open mouth, the edges being smooth, within the cervix, and propelling the fluid through its tube. Considerable pain over the pubes followed, which was relieved by anodyne fomentations. The discharge greatly abated, and a second injection was ordered. This was followed by more severe symptoms, and marked evidence of hysteritis; which was relieved by bleeding, both general and local, purgatives, fomentations, and a strict antiphlogistic regimen. The discharge ceased with the cure of the hysteritis; and in a few weeks she was presented, feeling quite well.

REMARKS.

I was not prepared for so alarming an attack of inflammation, as the consequence of the injection merely of warm water; although in a case entirely similar, and cured by injection, sent to me by Mr. Morgan, hysteritis of marked severity followed the use of a very weak solution of the sulphate of zinc. The remembrance of this induced me to employ tepid water only. It is well known, that in extensive uterine hæmorrhage, and in menorrhagia, cold water, and water mixed with salt, may be thrown in the uterine cavity with impunity. But in these affections there is no disease of the lining membrane, which is doubtless present in the cases of purulent secretion. Thus it would appear, that morbid derangement of the mucous membrane of the uterus precludes the safe employment of astringent, and even of mild injections. In a former part of my communication, I have narrated the severe and dangerous results of an injection of a mild solution of zinc into an ovarian cyst; and it seems that similar risk attends a similar treatment, where the mucous linings of cavities are secreting pus. It must, however, be recollected, that a cure was obtained by this measure, in both instances of purulent disease of the lining of uterine membrane: and the question is naturally sug-

gested;—whether the risk is compensated by the probability of cure? It ought also to be a matter of some consideration, whether adhesion of the sides of the uterine cavity may not follow the inflammation necessary for cure.

ADHESION BETWEEN THE WALLS OF THE VAGINA, OCCASIONING RETENTION OF THE CATAMENIA.

Reported by Mr. Henry Oldham.

Elizabeth R——, aged 22, a well-developed girl, of short stature, florid complexion, and fair skin, was admitted into Guy's Hospital in February 1836, under Dr. Ashwell.

At the Age of 15, she had some affection of the eyes: but with this exception, she enjoyed good health until ten months ago, when she first became troubled with headache, vertigo, and lassitude, a sense of fulness in the hypogastric region, with lumbar pain, capricious appetite, pain in the side, with irregularity of bowels, for which she was received into the hospital, under Dr. Cholmeley. At this time the catamenia had not appeared; and an examination was instituted, to ascertain if any mechanical obstacle existed. The parietes of the vagnia, about two inches from the vulva, were found closely adherent; and the fluid could be detected immediately above. Mr. Key divided the septum; and a large quantity of dark-coloured, viscid fluid, was evacuated. The opening was dilated with bougies; and she shortly left the Hospital, feeling well. There was but one scanty appearance of the catamenia after this period; but her health was not materially deranged until six weeks of the present time, a white mucous discharge alone having occurred. A recurrence of the above mentioned symptoms induced her to apply to me for advice, and, on examination, it was found that the divided surfaces of the vagina had again firmly united, but that the catamenial fluid was accumulated in small quantity only, which was proved by the absence of a fluctuating tumor above the cicatrix. Finding her general health somewhat impaired, and the morbid sympathies of the uterus, such as sickness, headache, &c, continually present, I prescribed laxative medicines, mild tonics, nutritious diet, and palliative remedies, to remove urgent symptoms. The symptoms became more severe, as the quantity of menstrual fluid increased; and she was re-admitted into the Hospital, under Dr. Ashwell. At this time she complained of giddiness, headache, and tinnitus aurium, lumbar pains, with a sensation of fulness and bearing down, occasional dyspnœa, uncertain appetite, depression of spirits, and great irregularity of the bowels, sometimes being troubled with diarrhœa, followed by constipation. The uterus was not to be felt above the pubes, but a feeling of fulness, not of distinct fluctuation, was communicated to the finger, on examination. The same class of remedies were used, under which her general health improved; and in two months' time, the tumor above the united parieties was so distinctly bulging, as to warrant the evacuation of the retained catamenial fluid, which was less in quantity than on the previous occasion. In twelve hours after the operation, symptoms of peritonitis were present; which were met with active measures, such as bleeding, both general and local, purgatives, calomel, &c. They, however, continued unsubdued, and she died.

The body was conveyed to the mother's where an inspection was obtained.

On opening the thorax, marked traces of recent pleuritis were universally diffused. The lungs, in some portions, were found to adhere to the opposed pleura costalis, by delicate bands of imperfectly-organized fibrin, which were readily broken down. In other parts, layers of plastic lymph were found loosely attached to the pulmonary pleura, and within the pleural sac; on both sides there were three or four ounces of serous fluid, with some flakes of lymph floating in it. The depending parts of both lungs were gorged with blood and serum, which ran out from the two surfaces of a divided portion. The upper lobes were crepitant, but their edges too rounded. The heart and large arteries were healthy.

On opening the abdomen, layers of lymph were found on the surface of the liver, particularly around the acute margin, and between the convolutions of the intestines. This lymph varied in degree of firmness; appearing, at the under part of the liver, to be converted into a tolerably well-organized band of false membrane, attaching it to the opposed surface of peritoneum; in other parts it was plastic; and in the pelvis, some little flakes were seen, swimming in serous fluid. The mesenteric glands were greatly enlarged, and also those along the psoas

muscle and brim of the pelvis. Some of these were of a scirrhous hardness; others of a chalky consistence. Those on the brim of the pelvis were particularly enlarged, so as greatly to encroach on the dimensions of the superior strait. The uterus, and its appendages, had no tcontracted adhesions; both anterior and posterior pouches being entire.

The situation of the stricture was a little more than an inch below the os; and above this part, the vagina appeared thin and distended, forming a continuous line with the dilated os, the circumference of which was above four inches. The cervix rapidly became thicker; and, for upwards of three inches towards the fundus, the parietes were double their normal size. The upper half of the body of the uterus was somewhat more bulky than natural, and its cavity slightly increased. The broad ligaments ware unaffected, but their appendages were much less delicate than natural. There was a cavity within the cervix, which formed the chief dilatation, so expanded as to be able to enclose a goose's egg. The rugæ and cells of the cervix were greatly diminished, and their surfaces presented a slight appearance of fibrinous effusion. Some few longitudinal striæ were visible, more particularly at the posterior part, apparently the result of a recently-contracted cavity.

REMARKS.

The preceding case confirms the opinion, that operations about the vagina and perineum are occasionally followed by inflammation of the peritoneum; and it ought to induce caution in the prognosis. The first division of the septum was not succeeded by mischief of any kind; yet, although there was no difference in the method of operating, a second incision through the parts led to a fatal attack of peritonitis. The distention of the cervix, while the fundus and body of the uterus retained their normal form and size, is singular; and corroborates the statements lately made as to the prolapsus of the neck of the uterus by stretching, and perhaps by growth, while the parts of the organ or viscus, above the cervix, remain in their original state. If, as this case proves, effused fluid may distend and stretch the cervix, independently of other parts of the organ, it is not difficult to conceive that the same result may occur from other causes.

PETITION FROM THE GOVERNORS OF THE COUNTY OF LOUTH HOSPITAL.

"TO THE HONOURABLE THE COMMONS OF THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND IN PARLIAMENT ASSEMBLED,

"*The Humble Petition of the Governors of the County of Louth Hospital,*

"SHEWETH—That they observe with great regret that the concerns of hospitals and dispensaris are introduced into a bill now before your honourable house, the object of which is a compulsory establishment of poor laws for Ireland — laws which they would most gladly see in operation under due restriction.

"That they feel convinced a bill which would, in any way connect these institutions (at present so much dependent for their support and protection, on the contributions and superintendence of the possessors of landed and other property,) with such as shall necessarily be upheld altogether by parochial, or county assessment, must prove very detrimental.

"That they have further to observe that amongst those who now avail themselves of these institutions, there are very many who would be deeply injured by such an alteration in the present system of managing county hospitals, as should cause them to be classed with pauper or workhosse—persons too poor to meet the heavy expenses incident to disease or bodily injury, yet possessing a spirit, not illaudable, and a place in society, though humble, that would make them decline all aid that could subject them to be ranked amongst the number pronounced destitute. For the sake of this numerous class also, your petitioners would deprecate such alterations in these institutions as might occasion the breaking down of an honest spirit or injury to so large a body of our community.

"Your petitioners are not aware that the mode of insuring to the public a right use of the funds entrusted to the governors of hospitals has been ever found ineffective.—These meet quarterly, when all accounts are examined and audited, and the affairs of the house duly considered, and, if necessary, special meetings are held at the call of three governors. Annually the whole concerns of the institution are again brought before the governors. The treasurer's accounts properly

attested, together with a statement of the benefits which have resulted to the public by the relief of the sick and maimed are then duly forwarded to the government office appointed to receive them.

"It may be useful to show what are the effects of the present system, as they now appear in the hospital of this county, and how these institutions may suffer by a departure from it, as regards funds, guardianship, and its moral influence upon our community.

"The governors, by economy, having established a building fund to the amount of fifteen hundred pounds, made an appeal to the possessors of property of every description throughout the county, by which that sum became doubled; with this they erected a building, in all respects fit and proper for their purpose.

"There are seventy governors by subscription. During the last year there have been seven general boards, and the number who have personally visited the institution, during the same period, average three in each week.

"Your petitioners therefore pray, that a system capable of producing so much benefit in every way to these institutions, and to the public, may not be exposed to any alterations that could endanger their well-doing, or interrupt the present course of private contributions to them.—Your petitioners will," &c. &c. &c.

LARVÆ IN THE HUMAN BODY.

At the last Meeting of the Entomological Society, a communication was read from Rev. L. Jenyns on the Larvæ of a Dipterous Insect, which was visited in very large quantities from the human intestines. The case was that of a clergyman, 70 years of age, whose first symptoms were general weakness, loss of appetite, and a tremulous motion in the intestines. The discharge continued for some months, and several quarts were passed alive, the chamber-pot being half full, sometimes accompanying the stools, and at other times being alone. The insects were evidently aquatic, and were supposed to be similar to those known as *Vermicularis Latrinarum*, of Swmumerdain. Similar cases are described by Dr. Bateman, and in the Edinburgh Medical Journal where they were considered the larvæ of the Musea Domestica. Their length was about four and a half lines, the breadth one and a quarter, elongated in the middle, and the body was composed of twelve membraneous segments. No light could be thrown on the means by which they got into the body; but the first effects were felt in the spring of the year; they likewise being voided in summer and winter; but it was supposed they were hatched in the intestines, where they found plenty of nutriment. Dr. Bateman considered that such insects were taken in with the water, though it did not appear that such was the case in this instance, the patient never drinking water unmixed, and that which was used being taken from a pond with a clay-bottom. The insects were provided with an air tube and branchia, and were evidently of amphibious habits.

MEDICINAL SPRING.

A new and valuable discovery of a medicinal spring has recently been made at Greenford-place, near Harrow, which, in the opinion of the best judges, is really worth a trial. The circumstances under which this Spring was first discovered may be stated in a few words. In the summer of 1836 the proprietor happened to mention to a medical gentleman from town, who was paying him a friendly visit at the time, that although he had bored for water to a great depth, none could be found which was not so impregnated with saline matter, &c., so as to be totally unfit for domestic purposes. It occurred to the medical gentleman that it might contain *medicinal* properties, and he recommended to the proprietor to have it analyzed. This has been done by one of the first practical chemists in London; and from the analysis it will be seen that it contains qualities of no common order, and not often found in a natural spring in this country; for, besides being a pleasant and grateful beverage, its properties as a saline aperient render it a valuable medicine, and its mode of operation is both mild and efficacious. From the above statement, and from the subjoined analysis, it will be seen that this water possesses properties which a long experience has proved to be very efficient in the cure of many diseases. To those whose constitutions are impaired from a residence in warm climates, and to persons whose digestive powers are weakened by sedentary habits, close attention to business, or late hours, a course of this water will be found highly beneficial, by

producing a salutary action on the various secretory functions.

Salts, &c., found in an imperial pint of water, as analysed by J. T. Cooper, sen., Esq.—(Cubic inches) 4·5 Carbonic Acid; 1·0 Nitrogen; (Grains) 40·76 Sulphate of Magnesia; 24·76 Sulphate of Soda; 4·61 Chloride of Sodium; 2 95 Chloride of Lime; 3·03 Carbonate of Lime; Hydriodate of Iodine, a trace.

FAMILY CORRESPONDENCE.

My dear Son,—We were all enjoying our tea and coffee, when your last letter came to hand, and I read it aloud; but when I had finished—"obstupui!"—your dear and anxious mother could scarce speak,—"vox faucibus hæsit!"—as for your poor old aunt Sarah, who, with the assistance of her patent ear-trumpet, heard only one fourth of your misfortunes,—"tremor occupat artus!"—and our worthy reverend pastor, Doctor ——, who dined with us, could not help (ab imo pectore) exclaiming,

"—— Quid non mortalia pectore cogis,
Auri sacra fames!"

For God's sake do not, in future, be so precipitate in your metropolitan medical movements! What *could* have induced you to enter to such a place asthe Charing Cross Hospital, without making some enquiry beforehand about the abilities and characters of the medical officers connected with it? You have had, in all our opinions at home, a most miraculous escape!

I never heard the name, until you mentioned it, of the Charing Cross Hospital; but from the confidential description you have have given me of the place, particularly of the beautiful PRIVATE RESIDENCE which is attached to it, and which was built at the expense of a charitable public, I have little doubt but in a very short time, the institution of Charing Cross will become very *notorious!* There certainly is something strange, as you say, in having such a *beautiful private family residence*—replete with every accommodation—the property of the charitable governors of the Hospital—and occupying one of the best situations in London, either for a *private or professional residence*, remaining unoccupied; whilst appeals are making, at least once a month, by sermons for money to support the unfortunate inmates of the Charity. From what I know of London, such a house would bring a rent of £150 a year at least, and when other parts of the Hospital are converted into shops, which no doubt turn in a good yearly income, I confess that I am very much surprised that this *beautiful private residence* has not been turned to some account before now!

Under all the circumstances, it appears to me that the *learned and upright* individuals, who compose the Council of the *Royal College of Surgeons*, acted a very questionable part in recognizing the practice of the Charing Cross Hospital, and again almost immediately withdrawing the *recognition*. To say the least, the conduct of them was very vacillating, and can only be excused by supposing that some daring misrepresentations had been made to the Council, by tho e interested in the sale of certificates, to the inexperienced young men like yourself, who might have been induced to enter there. I must certainly give you every credit, for the great clearness you have displayed in getting nearly all your money back.

I would now, my dear Tom, advise you not to delay a moment in seeing the hon. member for Finsbury, or if he be too much engaged with his constituents, surely there are some other of your friends, who are equally well acquainted with the history of the London Hospitals, and who would direct you what to do in your present predicament; at all events do not act upon your own judgment solely. I am told that the NORTH LONDON HOSPITAL is a very superior one, and that the physicians and surgeons attached to it, not only give their time and trouble to relieving its unfortunate inmates, but they actually give, for the support of the institution, all the fees they extort from the pupils who attend their invaluble practice. I confess to you I am very sceptical about the truth of this; but if such be *really* the case, I would have no hesitation in *insisting* upon your entering there immediately. It has always been my opinion that, in our public capacities as medical men, we are called upon to minister to the poor, as far as in us lies, without fee or reward; and so convinced am I of this, that were I called upon to give extreme examples of the degradation of human nature, I would point to those individuals who lived by converting the infirmities and ailments of "sick and needy" fellow creatures to their own sordid purposes. If, then, the *North London Hospital* can boast of such transcendant ex-

amples of philanthropy and generosity in the persons of its physicians and surgeons, it must justly, in my opinion, hold the highest eminence amongst the metropolitan charities of the United Kingdom, inas much as its truly benevolent medical officers can have no sinister purposes to serve in soliciting the attendance of the pupils at large to their practise, when all the fees received from those very pupils who enter, are devoted to the Christian shrine of UNIVERSAL BENEVOLENCE and TRUE CHARITY. It is for these reasons I am anxious for you to enter to the practice of the North London, but before doing so make every inquiry, for what I now you is mere report. I shall leave to your own judgment the school you had best enter to; do not however be led away by the impudent puffs which appear in the papers; the men who resort to this kind of notoriety can have but little to recommend them.

Were I placed as you are, I would first attend a few lectures of each teacher, and judge accordingly. Make my respects to your chum, Mr. SCOTT Macdonald, and let me hear from you soon. Say if you want any more money; all join in affectionate love.

Ever your dear father,
PETER ———.

Blarney, Kilbally macalogue,
January 1, 1337.

P.S.—When you call upon the hon. member for Finsbury, you may read this letter to him, and endeavour to direct his attention to that portion of it which relates to the BEAUTIFUL PRIVATE RESIDENCE, which is attached to the Charing-Cross Hospital, and which was built by MONEY COLLECTED FOR CHARITABLE PURPOSES, as such places have always particularly interested him, as I hope this will also.

My dear Father,—I just received your letter, and have only time to say, that I have entered to the MIDDLESEX HOSPITAL. I heard enough of the NORTH LONDON HOSPITAL, to decide me in having nothing to do with it. You shall hear all about it in my next. I have not yet entered to any school. Send me some money as soon as possible! The postman's bell is ringing so, dear father, with love to all at home,

Ever your affectionate and dutiful son,
THOMAS ———.

P.S.—I shall write you a long letter soon. My friend Sandy tells me most extraordinary things about the KING'S College. He is thinking of purchasing a dressership at ST. BARTHOLOMEW'S or GUY'S.

London, Great Russell-street,
January 7, 1837.

COURT OF KING'S BENCH.

DUBLIN, FRIDAY, JUNE 9.

The King v. *Mostyn and eleven others, Members of the Corporation of the Sligo Fever Hospital.*

Justice Burton delivered judgment in this cause. The learned judge recited the statute of the 58th George III., cap. 47, which regulated medical charities, and it appeared that the power of election lay with the members who had subscribed a guinea each, or such sums as were equivalent to constitute life members. A vacancy occurred, and two gentlemen became candidates—one of them was elected by a majority of votes, the other disputed the appointment on the grounds of informality and impropriety in the election, and that the twelve members were not qualified to vote, according to the terms of the act, and accordingly applied for a *mandamus*. After entering at length into the law of the case, the learned Judge concluded by refusing the application, with costs.

EXCESSIVE GROWTH OF HAIR.

Backstrom relates the case of a Prussian woman, whose hair extended beyond the sides of her bed, and she was in the habit of turning it over to make a quilt. Caligerus saw a man in Copenhagen, whose locks were six feet three inches in length, while the hair of a woman measured six ells.

NEW MODE OF ADMINISTERING SENNA.

A singular preparation as a purgative for females and children is recommended in the *Bulletin general de Therapeutique*, as one admirably adapted for the completion of its object, without inducing nausea or disgust. An infusion of senna is to be made in water, and allowed to stand all night. The liquid is to be filtered in the morning, and employed, instead of water, in making a cup of coffee, to which a proportiate quantity of milk, &c. should be added. It is said that the taste of the senna will not be perceptible.

BOOKS FOR REVIEW.

A Selection of Latin Prescriptions according to the Nomenclature of the Pharmacopœia Londinensis, 1836, for the Use of Medical Students. By George Fotvoye, author of a Literal Translation of Celsus, &c. London, 1837.

Observations on the Preservation of Health in Infancy, Youth, Manhood, and Age, with the best means of improving the Moral and Physical condition of Man. By John Harrison Curtis, Esq. &c., &c. 12mo. London, 1837. Renshaw.

A most instructive work for the general reader.

The Student's Pocket Guide to the College of Surgeons. By Forbes Winslow, Esq. J. T. Cox.

A Manuel of Practical Midwifery, including the Diseases of Women and Children, in accordance with Burns, Denman, Gooch, Dewees, Blundell, Davis, Ryan, &c. By Forbes Winslow, Esq., M.R.C.S.

An Introduction to Medical Botany, comprehending the Elements and Glossology of Botany—the Linnean, Artificial, and Natural Systems—the Natural System of Jussieu, and several comprehensive Tables of the Properties, Uses, and Doses of Medicinal Plants. Illustrated with coloured figures. By Thomas Castle, M.D.F.L.S, &c., &c. 12mo. pp. 276. E. Cox.

An excellent Manuel for the lovers of Botany.

A Translation of the Pharmacopoia Londinensis, with descriptive and explanatory notes on the Materia Medica, &c. By Thomas Castle, M.D. 12mo pp. 260, E. Cox.

A very correct translation.

The Teeth a Test of Age, considered with reference to the Factory Children. Addressed to the Members of both Houses of Parliament. By Edwin Saunders, Fellow of the Medico-Botanical Society, &c. London, 1837, 8vo. pp. 76. Renshaw

Rudiments of Physiology. By Dr. Fletcher. Part III, On Life, as manifested in Sensation and in Thought. Edited by Robert Lewins, M.D. F.R.C.P.E. With a biographical Memoir of the Author. Edinburgh, 1837, 8vo. pp. 144. Carfrae and Son.

TO CORRESPONDENTS.

Caustic's assertion will require further proof. Well prepared as the profession may be to give credit to any fraudulent measure of the *whole* body of the Council, we are unwilling to believe that any individual member would have the boldness to have his eyes blinded with a five pound note, to prevent him seeing the age of the candidate. The College are quite aware that false certificates of the birth of candidates, as well of their attendance at lectures, are by no means unusual.

Cadaver—Dr. James Sommerville was indebted to the *(certificates)* both of Sir Astley and Sir Benjamin, for his office of Inspector of Anatomy. The learned doctor had actively assisted Sir Benjamin in forming his pathological collection, for which Sir Benjamin declares that he paid the doctor handsomely, in addition to getting him the Inspectorship.

A Subscriber at Carlisle and others.—The Index will appear immediately.

A Glasgow Correspondent.—The Metropolitan University has not as yet published its regulations for degrees.

Medicus.—The information about the German degrees will be given at a personal interview.

M. R. C. S.—The information will be given on a personal interview.

M P.—The communications on Diseases of the Ear will be readily received by another hebdomadary. We cannot really state terms on authority. An application ought to be made to the quarter.

Chirurgus.—We believe the fee demanded by a ci-devant liberal Surgeon, for attendance on his medical brethren, is only one-half the ordinary charge. The terms to visit Cobbett were not agreed on.

Argus.—The information was not correct. There were only two of the Gower-street students rejected on last Monday. The other nine students passed at the three tables, which made three at each table; and there are three examiners at each of the three table, making nine in all.

A. S. will be likely to meet with employment in writing communications to certain Journals, by applying (all letters post paid) addressed to A. B, care of the House Surgeon, North London Hospital.

All communications and works for review to be forwarded, (carriage paid) to Dr. Ryan, 4, Charlotte-street, Bloomsbury-square.

THE

London Medical and Surgical Journal.

No. XIII. SATURDAY, JULY 1. Vol. I.—(1837.)

NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXIX.

SEMEIOLOGY.

Anatomical symptoms of Diseases—Alterations in the aspect of the Eyes—Strabismus—State of the Eyes in Tetanus—Flashing of the eye explained—Convulsion of iris—Muscularity of the iris disputed—Alterations in the aspect of the tongue—State of the tongue in gastro-enteritis, hectic fever, scarlatina, and dyspepsia — Lobster-tongue — Reason why the tongue is drawn to the diseased side in partial paralysis—Alterations in the aspect of the skin—Cutis anserina—Currie, Home, and Gregory on the highest temperature of the skin—Yellow, green, and black skin—Hope's erroneous views of the action of nitrate of silver on the skin—Peculiar odours of the skin—Alterations in the aspect of the skull—Cause of the precocious abilities of rickety children—Physiological symptoms of diseases -Alterations in respiration—Increased, diminished, and irregular stimulus — Defective conveyance of stimulus—Duncan and Wilson Philip on Asthma—Division of the par vagum—Imperfect mechanism of respiration—Cause of angina pectoris—Obstruction of the air-passages—Snoring—Sighing—Gaping—Cause of these actions, and diseases in which they occur—Hiccup — Hooping — Pathology of sneezing—Hot tears in ophthalmia, and ardor urinæ—Cause of death in all fatal diseases—Citadel of life—Changes in the voice--Whispering--Groaning--Screaming without pain—Weeping—Auscultation—Respiration as heard by the stethoscope—Defective murmurs—Puerile respiration—Tracheal respiration—Metallic respiration—Rales—Sibilous rale—Mucous rale—Crepitous rale—Sonorous rale—The voice as heard by the stethoscope—Resonance of the voice—Egophony--Pectoriloquy--Metallic tinkling—Alterations in the temperature of the body—Morbus ceruleus—Alterations in the circulation—True stimuli of the heart—Palpitation—Variation of the pulse—Quick, hard, and weak pulse—Wiry pulse—Peritonitic pulse—Slow, soft, and full pulse—Apoplectic pulse—Irregular and intermittent pulse—Stethoscopic phenomena of the heart—Increased sound—Increased impulse—Bruit de Soufflet—Bruit de Rape—Crepitatio Corii, or Craquement de Cuir Neuf—Sign of Pericarditis—Alterations in digestion—True pathology of hydrophobia—Cause of Dyspepsia—Three simuli to digestion—Impeded deglutition—Alterations in secretion—Vitiation of the secretions in sleep and insanity—Alterations in sensation—Vertigo—Tinnitus aurium.

4. *Eyes.*—The eyes do not close in paralysis, apoplexy, asphyxia, and the Hipprocratic countenance. An open state of the eyes is therefore considered a very bad sign. In tetanus the eyes are generally open, both when asleep and when awake; for neither the sphincter (orbicularis palpebrarum) nor the levator palpebræ superioris is completely relaxed, so that the eye-lids are always partially separated. The ball of the eye is fixed in this disease, from the contraction of the recti muscles. Ptosis is a palsy of the levator palpebræ. Strabismus occurs in the first stage of apoplexy, in myelitis of the upper part of the spinal chord, in amaurosis, in worms, &c. It takes place either from defective action of one set of muscles, or from increased action of another set. The direction of the eye is upward in tetanus, because the inferior oblique muscle acts too much; and in paralysis and syncope because the superior oblique acts too little. The eye is too

moist in tetanus and the last stage of ophthalmia: it is dry in the first stage of ophthalmia, in phrenitis, and in all diseases of debility. It appears to "flash" in anger, mania, hysteria, and fever. The cause of this appearance is, that the vessels are dilated, and admit more white blood; so that more light is reflected. The iris is confidently said to be convulsed in epilepsy. I never saw it, nor any one who had; and we are not sure that the iris is muscular, so as to be capable of being convulsed.

5. *Tongue.*—The tongue is flat, and the anterior extremity rounded in gastro-enteritis; it is cylindrical and pointed in hectic fever. It is in the latter that the lobster-tongue (red with white papillæ) sometimes occurs. In scarlatina it is white with red papillæ. In dyspepsia, especially in the morning, the tongue is rough and scabrous. The tongue goes to the diseased side in paralysis of one side of the face, being turned in that direction, as on a pivot, by the action of the genio-hyo-glossus muscle of the healthy side.

6. *Skin.*—The skin is pale, rough, and dry (forming the cutis anserina) in the cold stage of fever. It is pale, but not rough, in syncope. In the hot stage of fever it is red, and its temperature is likewise much raised, especially in scarlatina. Currie says that the highest point to which its temperature rises, is a hundred and *twelve* degrees; Home, says a hundred and *seven*, and Gregory fixes it at a hundred and *four*. The skin is yellow in jaundice, and in yellow fever. It is blackened, sometimes from the internal administration of nitrate of silver. Dr. Hope says this is occasioned by the nitrate of silver being decomposed by the perspiration, and forming muriate of silver. But if this were the case it would happen more frequently. The skin is of a green colour in chlorosis. It is dry in diabetes and dropsy. It has an acid odour in miliary fever; and in ramollisement of the brain its odour resembles that of a mouse.

7. *Skull.*—The precocious abilities which are often exhibited by children afflicted with rickets, are probably owing to hypertrophy of the brain, occasioned by the bones of the skull giving way.

II. *Physiological symptoms.*—These comprehend alterations from the disease in the various functions of the body, particularly in the processes of respiration, circulation, digestion, and secretion; and in sensation, thought, and voluntary motion.

1. *Alterations in Respiration.*—Expiration is never difficult, but inspiration may be vitiated either from excess or deficiency of the natural stimulus, from a defective conveyance of that stimulus, from imperfect mechanism, or from obstructed air-passages.

(1.) Altered stimulus of the blood occurs in exercise and in the hot stage of fever; in both of which cases the lungs have too much blood to transmit. There is too little stimulus in syncope, and the stimulus is irregular in palpitation of the heart, and various diseases of that organ.

(2.) Defective conveyance of stimuli takes place in diseases of the spinal chord, rachitis, myelitis, and the end of apoplexy; for in the latter case, the patient dies of asphyxia. The same is probably the case in asthma, for Wilson Philip says it is from a defective supply of stimulus, and not from increased action or spasm. Dr. Duncan is of the same opinion. Division of the pneumogastric nerve (par vagum) has the same effect.

(3.) Imperfect mechanism is seen in adhesions of the pleura, and in ossification of the costal cartilages; likewise in the case of fractured ribs, in pleuritis, pleurodiny, inflammation of the diaphragm and angina pectoris; which is probably owing to spasm of the diaphragm.

(4.) The air-passages of the lungs may be obstructed, either by secretion within themselves, or by a secretion outside, which compresses them, or by causes which compress the whole lung. These causes are croup, laryngitis, bronchitis, hæmoptysis, tubercles, anasarca, pulmonary apoplexy, a vomica, hydrothorax, pneumothorax, &c.

Rhoncus occurs in apoplexy and coma. Suspirium, or sighing, takes place in all congestive diseases; from fatigue and hunger, in diseases of the diaphragm, in the first stage of fever, and particularly in miliary and eruptive fevers. Ossitatio, or gasping, is a major kind of sighing, and is observed in the same cases; they are both occasioned by the venous circulation being retarded. Singultus, or hiccup, is observed in dyspepsia, diaphragmitis, diseases of the spinal marrow or nerves, in incipient phrenitis, and in gangrene. Hooping is the characteristic symptom of pertussis. Sternutatio, or sneezing, is frequent in the setting in of catarrh and the measles. Before increased secretion we have diminished secretion; and the mucous membrane not being defended by its natural secretion, the air becomes too great a stimulus to it. This

explains the occurrence of hot tears in ophthalmia; and of ardor urinæ in gonorrhea.

In all fatal cases of diease, death at last takes place from asphyxia; for as long as the respiratory system goes on, life continues. Hence the tuber annulare, or summit of the respiratory columns of the spinal marrow, is said to be the arx vitæ or citadel of life.

The voice is changed in laryngitis. It is hoarse in ulceration of the larynx, and in ossification of the cartilages. Susurratio, or whispering, is heard in diseases of the recurrent nerve, in aneurism of the aorta, and in all cases in which pain is felt on moving the muscles of the larynx. Gemitus, or groaning, is a sign of great pain, and screaming of still greater, but the latter is sometimes uttered when there is no pain at all; as in hydrocephalus, where it is the consequence of spasm. Fletus, or weeping, occurs in hysteria and various other cases. When violent it is attendsd with a convulsive action of the larynx, diaphragm, and abdomen.

Under the head of alterations from disease in the process of respiration, we are to consider the various signs afforded by the stethoscope. These may be grouped under three heads:—1. Altered sound of respiration, which may be either defective, puerile, tracheal, or metallic. 2. Rales, which may be either sibilous, sonorous, mucous, or crepitating. 3. Alterations in the voice; including bronchophony, pectoriloquy, egophony, and metallic tinkling.

(1.) Altered sounds of respiration are of four kinds:—1. Defective murmur. This takes place in hepatization of the lung, in pulmonary apoplexy, in pulmonary œdema, in some stages of bronchitis, in tubercles, and in all cases where the lungs are rendered impervious in any part. 2. Puerile respiration takes place in certain portions of the lung, whenever the respiration is deficient in other parts. The quantity of air received in the portions which remain pervious, is greater in proportion to the part of the lung which is useless; so that the air gets more quickly to the air-cells, and consequently with greater impulse. 3. The respiration is said to be tracheal when the sound natural to the trachea, is heard in other parts of the lungs; as in hypertrophy of the bronchia, and in the case of vomica. 4. Metallic respiration is caused by the air passing through a liquid contained in a cavity. It sounds like a pin striking on a glass.

(2.) Rales. These are of four kinds:—1. Sibilous rale; this is caused by a partial obstruction of the air-passages, from the secretion into them of a thin saline mucus; over which the air whistles. It occurs in the early stage of bronchitis. 2. Mucous rale; this is occasioned by the air passing through mucus of a thicker consistence, and is heard in hæmoptysis, phthisis, and the second stage of bronchitis. 3. The crepitous rale occurs in the first stage of pneumonia; in which it is occasioned by difficult dilatation of the air-cells, owing to effusion into their parieties. It also attends dry emphysema of the lungs, being caused by the motion of the effused air. 4. The sonorous rale is caused by the air passing over the thickened mucous membrane of the bronchial tubes. It is best heard in chronic bronchitis.

(3.) Alterations in the voice. The alterations in the voice, detected by auscultation, are likewise of four kinds:—1. Resonance of the voice is heard in cases in which the natural sound, or tremor, produced in the lungs when the patient speaks is louder than usual, as conveyed to the ear by the stethescope. It results from a portion of the lungs being a better conductor of sound than usual, owing to its solidification. 2. Egophony is sometimes heard when the pleural cavity contains a thin stratum of fluid, which compresses the lungs; as in hydrothorax, and the first and last stages of empyema. It is not present in hæmathorax, because the effused blood coagulates. 3. Pectoriloquy is the reverberation of the voice in a cavity of the lungs. 4. Metallic tinkling is heard in cases where a fistula exists between the cavity of the pleura, and a phthisical cavity in the lungs; and a drop of matter passes while the patient is speaking.

Alterations from disease in the temperature of the body, fall under the head of alterations in the process of respiration. The heat of the body is increased in inflammation and the second stage of fever. It is diminished in the first stage of fever, syncope, morbus ceruleus, paralysis, dropsy, asthma, diabetes, asphyxia, gangrene, and all cases of impeded circulation.

2. *Alterations in Circulation.*—These arise from changes in the ordinary stimuli to the action of the heart, as in syncope; or from the addition of preternatural stimuli, as in palpitation; or from changes in the organic condition of the heart. In the natural state of the system,

the heart has two stimuli; one from the blood, and the other from the brain. These may be either increased or diminished, or a new one may be added. In the latter case the pulse becomes quick, hard, and weak, forming what is called a "wiry pulse." It is very well marked in peritonitis, the new stimulus being sympathy with the inflamed peritoneum. The weakness of the pulse depends on the small supply of blood; its quickness, from the heart acting on this small quantity of blood, owing to the preternatural stimulus; and its hardness is from the heart's acting violently. Hence the three qualities go together. In apoplexy, where one of the usual stimuli (that of the brain) is cut off, the pulse is slow, soft, and full. The two kinds of pulse we have mentioned form the extremes, between which there are many varieties. Indeed, it is said that every disease of every organ affects the pulse differently, so that in some countries (Japan, for instance) they draw their diagnosis from the pulse alone. In such cases, the characters of the pulse are divided into two groups, critical and organic; the first showing a crisis of the disease to be at hand, the others pointing out the organ affected. These symptoms are subdivided into superior and inferior; the first of which relate to organs above the diaphragm; and the last to those below it, and these are again subdivided according to the different organs.

Besides the characters already mentioned, the pulse may be irregular or intermittent. In the case of some individuals, the pulse is intermittent during health, and if a fever occurs, it becomes regular. Galen wrote nineteen chapters on the pulse, though he did not know its cause The latest author on the pulse is Rucco.

With respect to the stethoscopic phenomena of the heart, there may be either increased or diminished sound. The other signs furnished by auscultation, are the flatus follis, attritio limæ, and crepitatio corii. The impulse is greater than it ought to be in hypertrophy of the heart, and the sound is greater in dilatation. The flatus follis, (bruit de soufflet, or bellows-sound) often indicates merely a functional disease; the attritio limæ (bruit de rape, or a sound of a saw) indicates organic disease; and the crepitatio corri (craquement de cuir neuf, or crackling sound of new leather) is a symptom of pericarditis.

3. *Alterations in Digestion.*—These comprehend difficulty of swallowing, as in hydrophobia; ruminating and vomiting, which are symptoms of dyspepsia, constipation, diarrhœa, flatulence, &c. Hydrophobia is, I think, a convulsion of the gullet It has been attributed to inflammation of various parts; but though various inflammatory appearances have been found in fatal cases of hydrophobia, none of them are essential to it. In the same way, hooping cough has been referred to inflammation of the bronchia, and dyspepsia to inflammation of the stomach; but such views as these would cashier functional diseases altogether. Inflammation of the bronchia and of the stomach may take place in the course of hooping cough and dyspepsia, but it is from a weak organ suffering from a general disease. Hydrophobia is evidently a functional disease, beginning with convulsions of the throat, and extending at last to the whole body. It may then give rise to inflammation of some organ. In the same way gastro enteritis, probably, cannot occur without dyspepsia; but the converse is not true, for dyspepsia may occur without gastro-enteritis. I think dyspepsia arises from debility of the muscular action of the stomach. The stomach has three stimuli; its contents, the brain, and sympathy with other organs. If the stimulus of sympathy be cut off, owing to diseases of other organs, the stomach has only two stimuli to act with, and therefore becomes dyspeptic. The same result will follow from diseases of the pneumo-gastric nerve, which incapacitate the latter for the conveyance of the natural stimulus. The same effect, and for the same reason, is produced by the the division of this nerve. When the stimulus of the brain is abstracted in consequence of apoplexy, large doses of purgatives are required to act on the intestinal canal. Vomiting may arise, either from the direct irritation of the contents of the stomach, or from the sympathetic irritation of the disorders of other organs. Most diseases are attended by dyspepsia, owing to the intimate sympathy of the stomach, with all the other organs of the body.

Deglutition is impeded in paralysis of the œsophogus, in scirrhus, stricture, inflammation, and spasm of that canal and in tumours. We distinguish scirrhus of the œsophagus from erythematic inflammation, by there being no increase of pain on swallowing, in the former case; by scirrhus generally attacking the aged, and usually the inferior part of the œso-

phagus, and by its being more chronic in its progress. A tumour is to be distinguished by a bougie. If it be moveable, it is a polypus; if not, it may arise from bronchocele, aortic aneurism, or some other affection, of which there will be the general symptoms. Paralysis of the gullet is to be distinguished from spasm, by there being no effort to swallow in the former, while the effort is vain in the latter; and by the former following apoplexy, while the latter follows spasmodic diseases. Paralysis is constant, is unaffected by the mind, and allows solids to be more easily swallowed than liquids; spasm is not constant, is much affected by the state of the mind, and allows liquids to be more easily swallowed than solids. In spasm we cannot pass a bougie, in paralysis we can. In the latter, galvanism is useful; in the former, opium.

4. *Alterations in Secretion.* — The odour of the breath is remarkably altered in insanity, owing to the halitus of the lungs being vitiated. Many other secretions of the body are vitiated likewise. This probably arises from the abstraction of the permanent stimulus of the brain; and the same vitiation of the secretions, and from the same cause, takes place during sleep.

If there be suppression of any secretion of the body, it indicates a constriction of the vessels concerned in that secretion. This causes an irritation, by means of sympathy, of other parts of the body, and leads to a vicarious discharge. The converse of this explains the vicarious suppression of other secretions, if one be in excess; as in diabetes, dropsy, &c. I should think that chlorosis was merely dyspepsia causing suppression of the of the menses, and not that suppression of the menses causes chlorosis.

5. *Alterations in Sensation.* — The senses are too acute in hysteria, phrenitis, the hot stage of fever, &c. They are too dull in coma, apoplexy, asthma, the first stage of fever, and in all diseases in which cold predominates. They are irregular in mania, hypochondriasis, and nervous diseases. Increased sensation leads on to spasm, and diminished sensation to paralysis. Lesions of sensation are of two kinds. 1. Morbid increase or diminution of the natural sensations, as nyctalopia, hemeralopia, &c. 2. Sensations entirely preternatural, whether proper to certain organs, or common to all. We shall consider the principal morbid sensations in detail.

(1.) Vertigo is intermitting sensation and thought. It may be called a convulsion of sensation.

(2.) Tinnitus aurium is felt before apoplexy, after epilepsy, and before and after all diseases of the brain. It is owing to the unequal circulation of the blood, which gives rise to too much blood, or too rapid a circulation of it in the parts lining the ear. It is the same cause which gives rise to muscæ volitantes, tingling of the teeth, formication of the skin, tenesmus, strangury, &c. The difference of these sensations is owing to the specific sensibility of the parts in which they occur.

LECTURES ON SURGERY.

By John Hunter, F.R.S.

Of the Heat of Animals.

When the external heat is so much diminished that it does not assist the natural powers of an animal, and it is obliged to vary its proper standard and become colder, then many of the actions are either lessened or totally suspended, not being necessary: generation is suspended, and insensibility takes place, commonly called sleep; but it is not sleep. Sleep is an effect which takes place in all degrees of heat and cold, though when a man is asleep he is colder than when he is awake, and I find in general the difference is about $1\frac{1}{2}$ degree, sometimes less. This difference in the degree of heat between sleeping and waking is not the cause of sleep but the effect; for many diseases produce a much greater degree of cold in an animal, without any tendency to sleep. Besides, many of the operations of perfect health are going on in the time of natural sleep, at least in the perfect animals, as digestion, secretion, &c., while none of these operations are going on in the tribes called sleepers during their torpid state. In these animals, where a great many actions are suspended, it appears an effect arising from a certain degree of cold acting as a sedative.

Now this degree of cold in some cases seems to act as a stimulant: the animal powers are roused to action for self-preservation. It is probable that most animals are under this influence of cold, and that every order has its degree of cold in which many of their actions can be suspended.

In some countries, where there is summer and winter, there are some animals

whose actions are suspended during the winter. This suspension of several of their actions seems natural to them, being part of the œconomy of such animals. In other animals, where a suspension of several of their actions takes place from cold, it seems a force on those actions, as it rather seems to lead to the destruction of the animal than the preservation of life. We cannot give a stronger instance of the forcible power of the suspension of actions in animals from cold than what happened to Dr. Solander and others in their voyage round the world.

Returning from a hill in Terra del Fuego, they were suddenly surprised with a degree of cold beyond what they ever felt before. Dr. Solander advised that they should immediately make their way to the ship as fast as possible, and he himself would bring up the rear. However unnecessary it might appear, Dr. S., who had crossed the mountains in Switzerland, well knew the danger of being left, and told them that they would soon be attacked with an almost irresistible propensity to sleep; that whoever gave way to the feeling would sleep, and whoever slept would die. But after this very serious caution, the doctor was the first who felt the sensation he described, and could scarcely be persuaded by the united efforts of Mr. Banks and the others to proceed. Mr. Banks's black servant, Richmond, was the next whose desire of sleep was very great, so much so that, notwithstanding the consequences, he begged that he might be left to die. The doctor only begged to sleep a little, and promised that he would then proceed. Mr. Banks, finding the case grow more serious every moment, sent forward four of the company to the first place where they could light a fire, the rest staying and endeavouring to bring up the few who had laid down. The Doctor was awakened, but their efforts were less successful on poor Richmond. In the midst of their endeavours to rouse him, they felt the same symptoms stealing on themselves very fast; it was in vain to attempt carrying, every one being scarcely able to carry himself. Having proceeded about a quarter of a mile, they met two of their party with the welcome news of a fire being kindled at the distance of half a mile. These two were dispatched in search of Richmond. Having warmed themselves, and becoming apprehensive for the fate of the two, a party set off in search of them. They had missed their way, and become victims to the malady from which they had endeavoured to restore the black. Richmond was found just crawling, and brought back, but no means had the least effect on the other two.

Winter.—I took two hedgehogs, not full grown, from their huts: the weather for some days preceding had been severe and frosty; the heat of the atmosphere was 44 degrees. In one the thermometer was introduced at the pelvis, and the mercury stood at 45 degrees; and at the diaphragm at 48 degrees. In the other I found the heat in the pelvis 46 degrees, and at the diaphragm 50 degrees.

The degree of heat of these animals being so low, it was compared with the heat of a puppy. The heat of the atmosphere during this experiment being 50 degrees, a thermometer was introduced into the belly and pelvis of the puppy; the mercury stood at 102 degrees, and also at the diaphragm.

Summer.—Atmosphere at 78 degrees. A thermometer was introduced into the belly of freshly caught hedgehog. In the pelvis the mercury rose to 95 degrees, at the diaphragm to 97 degrees.

From the foregoing experiments we find that the temperature is allowed to fall lower than the standard, which is productive of no evil excepting suspending such functions as require the standard degree of heat for their actions.

Animal matter endowed with the living principle, whether endowed with action or not, or whether of the first or second order of animals, as far as I am acquainted, admits of the temperature going somewhat lower than would serve for the congelation of the same matter in a dead state.

The more imperfect animals vary their heat according to the atmosphere in some degree.

I made the following experiments on fowls, which I considered to be one degree below what are commonly called quadrupeds.

I introduced the ball of the thermometer successively into the rectum of several hens, and found the mercury at 103 degrees, 103½ degrees, or 104 degrees. Cocks furnished the same results. In hens during incubation the heat was the same. Living eggs under the same hens raised the thermometer to 99 degrees; an addled egg only to 97 degrees. So that the living egg had some power of generating heat. In the more perfect animal, as the fowl, the heat is not allowed to come so low as in the more imperfect.

The power of generating heat keeps the higher animals as near one standard as possible; but it was not necessary that this standard should be very exact, therefore we find that they are in some degree influenced by external heat and cold, somewhat similar to inanimate matter and the more imperfect animals.

As parts recede from the common mass, as extremities, fingers, toes, the combs of cocks, &c., they are more subject to be affected by cold, and will raise or sink the thermometer in some measure according to the external degree of heat or cold applied; though not in a proportional degree to this application, as would be the case in inanimate matter.

I put the ball of the thermometer under my tongue, and kept it there for some minutes, when it rose to 97 degrees, but would not go higher. I then took several pieces of ice and put them in the same situation, allowing them to melt. This I continued ten minutes, and found on introducing the thermometer that it fell to 77 degrees, and gradually rose again to 97 degrees.

I thought the urethra would do still better, and I introduced the ball of a thermometer into a man's urethra. At one inch from the extremity the mercury rose to 92 degrees, at two inches to 93 degrees, at four to 94 degrees; at the bulb of the urethra it rose to 97 degrees. Thus we see that projecting parts are subject to have their heat lowered by surrounding cold.

To render this experiment more conclusive, I endeavoured to render this part colder by applying a colder medium to the penis than the common situation. This part was immersed in water at 65 degrees for a minute. The thermometer, introduced an inch and a half, rose to 79 degrees.

To find if there was any difference in the quickness of heating and cooling between living and dead parts, as also what difference, I made the following experiments.

I procured a dead and a living penis: the heat of the living penis, an inch and a half in, was 92 degrees. I heated the dead one to the same degree, then immersed both in water at 50 degrees. The dead one cooled fastest, but only two or three degrees; the living one coming down to 58 degrees, while the dead one came down to 55 degrees. I repeated the same experiment several times with the same result.

The standard heat of the human body is about 99 degrees, and I believe that degree is pretty regular; however, this regularity in some degree arises from their being in every body a considerable mass of matter which causes less consumption of heat. This standard is necessary for the more material actions of life.

The heat of the more imperfect animals is not the same in every part of the body, even when there appears an equal mass of matter. To ascertain this, I took a healthy dormouse, the atmosphere being at 64 degrees. I put the thermometer into the belly, nearly in the middle between the thorax and the pelvis; it rose to 74 degrees; at the diaphragm it rose to 80 degrees, against the liver to 81½ degrees.

As there is some difference between the heat of an animal at the source of the circulation and that of the mouth, pelvis, and rectum, we must make an allowance in judging of the heat of the heart by that of these parts.

I next wanted to ascertain if cold applied to an animal would act as a stimulus, and therefore greater heat be produced than the common standard.

I took a healthy mouse,—atmosphere 64 degrees,—introduced the ball of the thermometer between the thorax and the pelvis. The mercury rose to 74½ degrees, at the liver to 81½ degrees. I put the mouse into an atmosphere at 30 degrees, and when the ball was again introduced into the belly the mercury rose to 92 degrees, at the liver 93 degrees, the animal being still very lively. Here was an increase of 17½ degrees in the belly, and 11½ at the liver, and this produced by the application of cold to the skin.

Of the Resistance to foreign Heat above the standard.—We have found that animals evidently possess a power within themselves of producing heat when in a cold atmosphere, so as to keep their bodies in a temperature suitable to the œconomy of the animal. But as animals are often placed in an atmosphere much hotter than their standard heat, I wanted next to see how far they have a cooling power, or, if they have not, to what degree the heat of an animal might be increased, and what might be the consequence of that increase, supposing it possible; for *a priori* we should suppose that the standard heat, or that heat at which all the animal functions are best carried on, would be the medium heat of the animal. But I find from experiment that the standard is generally within a degree or two of the ultimate

heat that the animal can bear. As allowing the heat to rise above the standard could answer no wise purpose, Nature has put a check to it by making the stimulus of heat the cause of its own annihilation, just as the stimulus of cold produces, on the other hand, an increase of heat.

This would appear to take place in two different ways: one is by evaporation, which arises from the action of the living powers; and the other by an immediate power of destroying heat. So that animals have two means of destroying heat, while it would appear that they have only one for the production of it.

I put a viper into an atmosphere at 108 degrees, and allowed it to stay in seven minutes, when the heat in the stomach and anus was 92½ degrees, beyond which it could not rise in the above heat.

The same experiment was made on frogs with nearly the same success.

I now tried to what degree of heat I could bring a more perfect animal; and as I found the penis the best part for trying the experiment with cold, I imagined it would be the best for the trial of heat. The experiments were made in the same manner with the former, only the water was now hotter than the heat of the man. These were only simple experiments, but I chose to make a comparative one with a dead penis.

A living and dead penis were immersed in water gradually made warmer and warmer, from 100 degrees to 118 degrees, and continued in this heat for some minutes. The dead penis raised the thermometer to 114 degrees, while the living could not raise it more than 102 degrees. It was observed by the person on whom the experiment was made, that about a minute after the part was put in water the water did not feel hot, but on the water being agitated it felt so hot that he could hardly bear it. On applying the thermometer to the sides of the living glans, while in the water, the mercury fell from 118 degrees to about 104 degrees, while it did not fall above a degree when put close to the dead penis, so that the living glans produced a cold space of water about it. This experiment may may furnish a useful hint about bathing in water, whether colder or warmer than the heat of the body; for if it is intended to be colder or hotter, as it will soon be of the same temperature with that of the body, the patient, if in a large bath, should move from place to place, and in a warm bath there should be a constant succession of water of the intended heat.

The experiments made by Dr. G. Fordyce in heated rooms prove, in the clearest manner, that the body has a power of destroying heat.

The action of evaporation produces cold, and in proportion to the quickness of the evaporation is the cold produced; and from experiment we find that the evaporation of spirits of wine produces cold faster than that of water, and of æther faster than spirits of wine. On this principle we suppose that evaporation is one means of producing cold in the living body.

It appears from Dr. Fordyce's experiments that the living powers were very much assisted in generating cold by evaporation, but that evaporation was not the sole agent in keeping the body cool. There is therefore a further provision of Nature for enabling animals to support great heat. In order to keep up a just balance of temperature, it is probable that the living powers exert greater effort as evaporation is deficient, and less effort as evaporation increases. In emergencies, evaporation is not sufficient: when a greater power of producing cold than ordinary is required, the powers of the animal are called forth.

As animals can only destroy a certain quantity of heat in a given time, so the time they can continue the full exertion of this destroying power seems also limited. It is probable that both the power of destroying heat, and the time in which that power can be exerted, may be increased by frequent exercise.

When Dr. Fordyce was in the heated room, his hand became so hot as to make his body feel cool to it. It is probable that that part, from its habit of changing its degree of heat, is more ready to take on different degrees of heat applied. It is found from experiment, in the application of cold, that all the extremities are more subject to the laws of inanimate matter than the body; and the nearer the source of circulation, the greater the deviation is from these laws. Possibly the same may be observed with regard to heat.

In animals which have a standard heat it would appear to be more natural to form than to destroy heat, (although the power of destroying it appears to be much greater than that of producing it,) for we may observe that they live with much more ease to themselves when in an atmosphere considerably lower than their

standard, in which they must constantly be generating heat, than in an atmosphere even of their own temperature, in which it cannot be necessary for them to form heat; so that either this action simply of generating heat, or being in such a degree of cold as makes this action necessary, proves salutary to the constitution. Perhaps the medium between their extreme heat, which is 98 degrees, and the lowest degree they can come to, is the proper and most wholsome temperature of the atmosphere, and this is about 63 degrees.

Some of these animals which are endowed with this property of a standard heat have this power of generating heat much stronger than others, and are always best in those situations where this power can be exercised: we should naturally suppose that this power always requires a necessity for that exertion equal to its power, so that the power and the necessity should always be proportioned. This cannot be the case with those imperfect animals which have little or no power of forming heat, but are obliged to the atmosphere for heat.

When we consider the white bear, the fox, and wolf, in the more northerly climates, inhabiting countries where the temperature is below zero, yet having a power of preserving their noses, feet, tails, &c., while man, with all his care and art, loses his extremities in the same degree of cold, we must acknowledge that those animals have by much the greater power of generating heat of the two. When we compare the above animals with the lion, tiger, monkey, &c., we find the proportion in the power of generating heat between these two classes of animals still greater; for if the human species finds it impossible to generate heat like the white bear, &c., the lion and tiger must find it impossible to generate heat equal to man: for though they may not lose parts of their bodies when in cold that is tolerable to the human species, they lose their lives in the end.

It may be desirable to inquire into the proper temperature for each of those classes above-mentioned, that is, the temperature in which they carry on their ultimate actions. This must be ascertained with great difficulty; perhaps the temperature suitable to the white bear, &c. is about 50 degrees; for the human species about 60 degress; for the lion, tiger, &c. about 70degrees; and there may be some which may require a still higher temperature, though probably none will require a lower than 50 degrees.

On the Effects of Climate.—By climate we mean that state of the atmosphere which is peculiar to any particular part. Climates vary as much as anything in nature. Their difference may be said to arise chiefly from the influence of the sun, from their moisture or dryness, which will depend partly on the shape of our globe and its oblique direction with regard to the sun, and also from the nature of the surface, whether hilly, or flat, or woody. The different seasons are dependent on the form of the earth and its motion round the sun. Between the tropics the variations of seasons are less; still there are kinds of seasons, and the climates are very various. The greatest variety of climate is near the tropics. The world there, being chiefly if not altogether heated by the sun, works very hard to gain as much of its influence as possible; it exposes itself to it as much as possible in every direction. The air of the equator is very different from that of the poles; few can live in the climate of the poles, either animals or vegetables, and even of those which can live many become torpid during the winter. It is wonderful, considering the necessity of heat to animalization and vegetation, and how partial Nature has been in the distribution of it, how both these processes go on so well as they do. Nature, however, has been obliged to adapt animals to their different climates as well as vegetables, except the bramble, which lives between the tropics and at the poles.

Some animals become torpid during the cold, others even of the same order do not; this seems to be because the food of the first is not to be found during that season: so nature formed them either animals of passage, as some birds; others she constituted so as to become torpid. Animals of passage, however, seem to have their peculiar climate; fish, which wander more than most animals, have their climate, and the general cause of their moving south is for the purpose of propagation. So herrings come from the North Pole to the coasts of Europe and and America, for no other purpose than to lay their spawn. Quadrupeds seem the best formed for variations of climate, though their heat is more stationary. There are exceptions, as the dormouse, bat, &c.; but men, dogs, deer, horses, &c. live tolerably well, though not without disease, between the tropics and also far north. Nature has furnished some animals with mechanical means for adapting them to climate, as hair, feathers, &c.

The use of hair is clearly to preserve warmth: the porcupine of Italy has no hair, but only quills; and the southern bears have only bristles, without hair. There are some animals furnished with proper non-conductors of heat, as seals, sea-cows, &c., whose hair can be of little use to them while living in the sea, and is therefore only useful to them perhaps while on land. Those animals, as whales, which, from living constantly in water, could derive no advantage from hair, have an immense quantity of fat, which is a worse conductor of heat than water by nine to one.

REPORTS OF OBSTETRIC CASES IN PETERSHAM WARD.

By Dr. Ashwell.

(From Guy's Hospital Reports.)

Abortio.—The case of abortion was induced by the patient's attempting to lift a heavy weight. On her admission into the Hospital, she was suffering from all the symptoms from loss of blood. The sulphate of quinine, generous diet, porter, and rest in the recumbent posture, succeeded in restoring her system to its proper tone.

Amenorrhœa.—The cases of amenorrhœa were, in number, eighteen. Ten of them were cases of simple amenorrhœa: two occurred in patients of highly plethoric habits; and the remaining six were complicated with local affections. The cases of simple amenorrhœa were treated by aperients, metallic tonics, and emmenagogues. Injections of liq. ammoniæ and milk, in the proportion of m. x. of the former to ʒi. of the latter, were successfully employed in some cases; while several appear to have derived considerable benefit from electricity—a remedy frequently resorted to in the ward, during the last twelve months. In those cases where the healthy condition of the alimentary canal has been restored, and uterine torpor continues, slight electric shocks, passed through the loins, advantageously stimulate the genital system, and, occasionally, at once induce the catamenial secretion. Still electricity is uncertain; and it will often be employed unsuccesfully: in some instances, the alarm attendant on its use has cured theamenorrhœa, by suddenly exciting menstruation. The six cases of complicated amenorrhœa were very interesting. In one, it was associated with chorea. This patient, after protracted treatment, was eventually cured by sulphate of zinc, and the injection of liq. ammoniæ into the vagina. In another amenorrhœa was complicated with epilepsy. The medicine prescribed was ferri sulph. gr. i. pulv. digitalis gr. i. pulv. myrrhæ gr. ij. mucil. Acaciæ q. s. fiat pilula ter die sumenda. It is worthy of remark, that these pills were persevered in for three weeks, without any injurious consequences from the use of the digitalis; a circumstance attributable, probably, to its combination with the iron. At this period, the catamenia appeared; and there has been no return of the fits. In a third case, hemiplegia was attendant on the amenorrhœa. This complication was tedious, and difficult to manage. At first the mist. ferri c. was prescribed; afterwards, the sulphate of zinc; and an iodine liniment was rubbed over the spine, night and morning. Menstruation was eventually established, and the patient gained the entire use of the side. In the fourth case, there was tænia with the amenorrhœa. In addition to the other remedies, the ol. terebinth. was curatively employed. In the fifth patient there was vicarious discharge from the mamma, in conjunction with amenorrhœa: the mist. ferri c. was ordered, as well as the daily employment of the ammoniacal injection. The last patient had, in addition to the amenorrhœa, a peculiar nervous affection of one of her lower extremities, which completely subsided when the catamenial function was, by appropriate remedies, healthily established.

Anœmia.—This patient was suffering from a considerable loss of blood after delivery, occasioned by a partial adhesion of the placenta to the uterus. Tonics, nutritious diet, and astringent injections, soon restored her to a state of convalescence.

Carcinoma Uteri.—Carcinoma Uteri et Vaginæ.—Six cases of carcinoma affecting the uterus alone, and two implicating both the uterus and vagina, have been admitted. The former consecutively presented the various indications of the disease, from the scirrhous hardness, to complete ulceration, with fungoid growth. In the two latter, the inguinal glands were enlarged and indurated. These distressing maladies were treated, by preventing, as far as possible, every cause of irritation; and by the cautious exhibition of anodynes, by the mouth, by injection, and as suppositories within the rectum.

Occasionally, considerable relief was afforded by a plaster of the extract of belladonna, applied over the sacrum and loins.

Chlorosis.—There have been eight instances of chlorosis, comprising both the simple and complicated forms of the disease. Purgatives, tonics, and emmenagogues have been the medicines employed; suiting their exhibition, combination, and dose, to the various cases.

Contractio Vaginæ.—This occurred in the person of a woman, aged 30, who had given birth to five still-born children. From some unknown cause, inflammation occurred in the posterior part of the vagina, followed by an abscess; in the healing of which, so great contraction occurred as materially to interfere with intercourse. A bougie was ordered to be applied daily; and she left the hospital considerably improved.

Climacteric Disease.—The two cases of climacteric disease occurred in persons above fifty years of age, and well pourtrayed all the symptoms so excellently described by Sir H. Halford, in his essays: they had both contracted second marriages late in life, and had suffered, although in a very slight degree, from leucorrhœa. Astringent injections, the employment of stimulants with tonics, as the inf. serpentariæ, with the ammoniæ sesqui. carb., comprised the treatment.

Dysmenorrhœa.—This patient was twenty-two years of age; and had been affected with menstruation for four years, the pain recurring with great intensity about twenty-four hours before the accession of the catamenia, and ceasing as the flow increased. Hyoscyamus and camphor, with the hip-bath, were the remedies employed during the period; and the iodide of iron during the intervals of menstruation. She left the hospital well.

Fungoid Excrescence.—This woman, when admitted, was forty-seven years of age: she had twice miscarried, and had borne five living children; the birth of the first being followed by hæmorrhage, so excessive as to endanger her life. For two years before admission, she had had sanguineous discharge at intervals. On examination, a fungoid excrescence was found to protude through the os uteri, probably growing from the lining membrane of the uterus: by the aid of the speculum, veins were seen to ramify over the tumor, which bled on the slightest exertion or emotion. Astringent anodyne injections into the vagina, to allay the pain and repress the hæmorrhage, with anodynes and tonics, comprised the treatment. At her own desire, the patient was presented; the disease having all but destroyed her life. The plug of tow, dipped in alum water or tincture of galls, was strongly recommended.

Hydrops Ovarii.—Six cases of ovarian dropsy have been received for treatment. Of these, four were married, and two were unmarried women: in three, the diseased commenced on the right; and in three, on the left side. Two only were tapped, and both successfully: in one, the operation had been performed before. Their ages were as follow

Unmarried, 39 years, left side, stationary.

Married, 1 child, 38 years, left side, stationary.

Married, 1 child, 3 mis. 51 years, right side, tapped.

Married, 7 children, 45 years, left side, increasing.

Married, 1 child, 51 years, right side, tapped.

Unmarried, 30 years, right side, died.

Hysteria.—There has been but one case of an hysterico-epileptic nature; which required local bleeding, purgatives, and the subseqent employment of the mist. assafœtida.

Imperforatio vaginæ.—Two cases of imperfatio vaginæ have been received for treatment. One, the instance of Elizabeth Rusher,, is fully described hereafter. The other occurred in the person of a girl, aged 17. She had for nearly eight months complained of great pain in the loins, and other symptoms, which led to the suspicion of the mischief. On examination, the labia were found separated by a projecting tense body, resembling, in form and feeling, the membranes containing the liq. amnii during pain. An opening was made; and about two quarts of thick fluid escaped, having the appearance of melted emp. roborans. The vagina was injected with warm water; and, on examination, the os uteri was felt, high up, dilated to the size of a shilling, and the upper part of the canal was very capacious: a piece of lint was placed in the opening, and she shortly left the hospital, cured.

Induratio Oris Cervicisque Uteri.—Leucorrhœal discharge, with more or less of central pain, marked the whole of these cases. In three, the anterior limbus of the os uteri was indurated, and micturition was painful and difficult. In the fourth case, the posterior limbus was affected; and there was pain and difficulty

in emptying the rectum. For treatment, reliance was chiefly placed on the internal administration and the external application of iodine.

Inflammatio Mammæ.—The three cases of mammary inflammation occurred in first confinements: before admission, abscess had taken place. Tonics, as the quinine, porter, &c., were administered, to support the patient's powers during the process of suppuration.

Inflammatio Oris Cervicisque Uteri.—These cases were marked by the creamy discharge; pain in the erect position, greatly increased by examination, &c. Cupping on the loins, anodyne injections, mild laxatives, with hyoscyamus, and absolute rest in the recumbent posture, comprised the whole of the treatment.

Irritable Uterus.—In these three cases, there were the usual symptoms; pain in the lower part of the abdomen, passing round to the loins, and running along the brim of the pelvis: relieved, but not removed, by the recumbent position. The hip-bath, hyoscyamus and camphor, assisted by the employment of anodyne injections and suppositories, mitigated the pain; while tonics, as the calumba, cascarilla, and quinine, were administered, to maintain the powers of the constitution.

Leucorrhœa.—Five cases of leucorrhœa were received for treatment: in all, the discharge was very profuse, and had continued so long as to produce many of the symptoms of loss of blood; as, pallor of the surface, œdema, dyspnœa, &c. The treatment consisted in enjoining the strict and periodical employment of astringent injections; as, the lot. alum. c., the lot. arg. nit., or the lot. ferri sulph. In administering tonics, both mineral and vegetable; of the former, the sulphate of zinc and the mist. ferri comp. were preferred; of the latter, gentian, calumba, cascarilla, and quinine.

Menorrhagia.—Two of these cases may be stated as active, and the three as passive menorrhagia. To the former, there were all the attendant marks of plethora; as, fulness about the pelvis, heat and throbbing of the genitals, full pulse, tumid and painful mammæ: these were treated by cupping from the loins, saline purgatives, and refrigerants. The three cases of passive menorrhagia occurred in married women, who had had profuse leucorrhœa for some considerable time. Great benefit was derived from the employment of the ergot of rye, both internally, and externally, in the form of injections.

Polypus Uteri.—Two cases of polypus uteri have been received for treatment. The first, in a woman, aged 47, who had borne nine children, and had once miscarried. Twelve months before admission, she was suddenly seized with a gush of blood from the uterus. These bleedings occurred, at intervals, up to the period of her admission: between the bleedings, she was never free from an aqueous discharge. On admission, the polypus was found to protude through the external parts. Ten days after her admission, it was tied, by means of the double canula. Three days afterwards, the polypus came away, and she did well.

In the second case, the patient was forty years of age, was married at 31, and was delivered of a still-born seven months' child, ten months afterwards. On examination, the polypus was found to have firmly adhered to the roof of the vagina; indeed so firmly, that it was utterly impossible to separate the adhesion, or to allow of the passing a ligature around the tumor; nothing, therefore, was attempted, as a radical cure.

Procidentia Uteri.—In three of the cases of procidentia uteri, the os was superficially ulcerated to some considerable extent; the inverted vagina appearing to have lost the character of mucous membrane, partaking more of the nature of common integument, and being of a pinkish colour. The black wash, with mucilage and opium, was applied, to heal the ulcerations. Afterwards, the parts were returned, and kept in situ, by a pessary.

Prolapsus Uteri.—Here the constitutional symptoms were far more severe than in the cases of procidentia, although in the three cases of the latter there was ulceration. Astringent injections, the lot. alum. c., lot. arg. nit., lot. ferri sulph. were employed, to excite the contraction of the vagina. Pessaries of various kinds were adapted to the several cases.

Prolapsus Vesicæ.—This displacement was occasioned by the patients' assuming the erect position too soon after a very difficult labour. There was great irritability of the vagina, with leucorrhœa. The only astringent injection that could be borne was the lot. arg. nit.; and the only artificial support, a piece of sponge.

Puerperal Convulsions.—Two cases of puerperal convulsions were admitted, both occurring during labour; one, in a patient completely anæmiated from poverty and starvation; the other, in a remarkably stout plethoric Irishwoman,

19 years of age, and unmarried. The former was treated with stimulants, tonics, nutritious diet, and evaporating lotions to the head; while in the latter case, the strictest antiphlogistic remedies were employed. Both cases terminated successfully.

Tumor Abdominis.—This patient, on her admission into the hospital, was reported to have "an abdominal tumor attached to the uterus, probably malignant." By minute and careful examination, it was found to be external to the abdominal cavity, but posterior to the abdominal muscles. After some time, fluctuation became distinct; and she was transferred to the care of the surgeon, who opened the swelling, and gave exit to a large quantity of pus.

Tumor Meatus Urinarii.—One case was admitted, in which, growing from the orifice of the meatus urinarius, there was a small vascular tumor, giving rise to great pain in micturition, and bleeding on the slightest touch: nitrate of silver, daily applied, effected its removal.

Tumor Ovarii.—Two of these cases occurred on the left, and two on the right side. Three of the patients were single women; and the fourth, although married, was separated from her husband. The iodine ointment, applied externally, and the internal exhibition of the julep. iodinii c., was the treatment employed. If any unpleasant symptoms were occasioned, as vertigo, heat in the throat, or fulness in the epigastrium, the patient was ordered to take the carbonate of magnesia; and, temporarily, to discontinue the medicine. Although these measures were not successful in removing the disease, still they seemed to render it stationary.

Tumor Uteri.—This patient was forty-one years of age, unmarried, and had generally menstruated regularly. There was a hard tumor above the pubes, extending upwards to the right side, as high as the umbilicus. Internal examination detected it, growing from the fundus. At the time of menstruation the tumor became larger and painful. She was ordered to apply iodine ointment, and to take the julep. iodinii c. three times a day. She persevered for weeks, although without diminishing the uterine tumor; still, to the very great improvement of her constitutional powers.

Vesico-Vaginal Fistula.—Two cases have been admitted; both the result of protracted labours, in which perforation was resorted to. In one, the aperture admitted the joint of the fore-finger; in the other, the opening was smaller; and the patient was benefited by allowing a catheter to remain in the bladder, as well as by the daily use of the injection of the liquor calcis and opium.

THE ANATOMIST.

THE THORAX AND ITS CONTENTS.

The thorax is bounded anteriorly by the sternum and cartilages of the ribs, posteriorly by the vertebræ and lesser circle of the ribs, and on either side by the shafts of the ribs and the intercostal muscles. Its upper orifice is transversely oval, and allows the exit and entrance of vessels, nerves, and muscles to and from its cavity; its inferior orifice, or circumference, being ing much larger, and closed by the diaphragm.

The thorax contains the heart and lungs, and also several vessels, nerves, glands, &c., to be noticed as we proceed.

THE PLEURÆ

Are two serous membranes, one on either side, which cover the inner surface of the thorax, and are reflected upon the outer surfaces of the parts contained in its cavity. That portion of the pleura which lines the thorax, is called the *parietal* layer, and that which lines the contained parts the *visceral layer*. Each pleura can be traced in the following manner:—From the posterior surface of the sternum it passes backwards until it meets with the anterior surface of the pericardium, along the side of which it passes to the anterior surface of the root of the lung; from this it passes upon the lung, and is reflected over the entire surface of the organ, until it arrives at the posterior surface of its root and of the pericardium, from whence it passes upon the sides of the bodies of the vertebræ, reaching as high as the transverse process of the sixth cervical vertebra, on the right side of the seventh on the left, and descending to the diaphragm, the thoracic aspect of which it covers; it finally lines the ribs and intercostal muscles, until it arrives at the portion which was opened, and which corresponds to the posterior process of the sternum.

Ligamentum latum pulmonis (one on either side) is merely a triangular fold of pleura, formed by the reflection of the membrane from the lower edge of the root of the lung upon the diaphragm.

ANTERIOR MEDIASTINUM.

A triangular cavity formed by tearing through the cellular tissue, which connects the right and left pleura behind the sternum; the base is formed by the sternum, the sides by the separated pleura and the apex corresponds to the anterior surface of the pericardium, where the pleuræ separate to enclose this bag. Thus formed, it contains the origins of the sterno-hyoid and sterno-thyroid muscles, branches of the descendens noni nerve, the remains of the thymus gland, lymphatic glands and absorbents, the mammary vessels, the triangulares sterni muscles and loose cellular tissue.

MIDDLE MEDIASTINUM

Is of an oval shape, and is formed by the reflection of the pleuræ upon the sides of the pericardium; it consequently contains this bag and its contents.

POSTERIOR MEDIASTINUM

Is formed by the reflection of the pleuræ upon the sides of the bodies of the vertebræ; it is of a triangular form, the apex anterior corresponding to the posterior surface of the pericardium, the sides formed by the pleuræ, and the base represented by the anterior surfaces of the bodies of the vertebræ; it extends from the third to the tenth dorsal vertebra, and contains the following parts :—the bifurcation of the trachea, the œsophagus and pneumo-gastric nerves, the thoracic duct, the vena azygos, the thoracic aorta, the splanchnic nerves, lymphatic glands, absorbents and loose cellular tissue.

THE LUNGS

Are two soft, spongy, vascular bodies, one contained on each side of the cavity of the chest. Each lung resembles a cone, with that side corresponding to the median line truncated; the base concave corresponds to the diaphragm, the obtuse rounded apex rises in the neck, a little above the level of the first rib; the extreme convex surface corresponds to the internal concave surface of the thoracic parietes, and the flat or truncated surface corresponds to the mestiastina. The posterior edge of the lung is thick and rounded, whilst the anterior is thin and irregular. Each lung is distinguished into lobes, which are separated from each other by fissures; a little above the centre of each is the *root* formed by the pulmonary vessels and bronchial tube, connected to each other by cellular tissue, and invested by the pleura. The bronchial tube is situated posterior and superior to the pulmonary vessels; the two pulmonary veins are placed anterior and inferior to the artery and bronchus, and the pulmonary artery is placed between the bronchus and the pulmonary veins, but behind the pulmonary veins and before the bronchus. The *root* of each lung has anterior to it the phrenic nerve and filaments of the pneumo-gastric nerve, posterior to it the pulmonic plexus, and in inferior the ligamentum latum. The root of the right lung has the vena azygos arching over it.

The right and left lungs differ from each other in some important particulars: the right lung is broader and shorter than the left, and consists of three lobes, separated by one fissure; the right also ascends higher in the neck, and the anterior edge of the left presents a notch where it corresponds to the apex of the heart.

The intimate structure of the lungs consists of the ultimate ramifications of the bronchial tubes, which are the continuations of the trachea, and the branches of the pulmonary artery and veins; they also receive bronchial arteries for their nutrition.

TRACHEA AND ITS RAMIFICATIONS.

The wind-pipe, or trachea, is a cylindrical tube, extending from the crycoid cartilage of the larynx to the level of the third dorsal vertebra. It consists of from seventeen to twenty fibro-cartilaginous rings, truncated behind, and connected to each other by an elastic membrane; about the posterior fourth of each ring is deficient, and it place is supplied by fibrous membrane.

Opposite the third dorsal vertebra the trachea divides into the right and left bronchial tubes; the right bronchus is larger than the left, and runs transversely into the root of the lung and divides into three branches; the left bronchus passes through the arch of the aorta to the root of the left lung and divides into two branches.

The bronchi consist of cartilaginous rings, but as these tubes advance into the substance of the lung they diminish in size and firmness, until their place is supplied by fibrous tissue, or transverse circular fibres, which tissue also disappears, and length nothing remains but the mucous membrane, which terminates in the air-cells, upon which ramify the ultimate ramifications of the pulmonary artery and

the commencing radicles of the pulmonary veins.

The ramifications of the pulmonary artery communicate with those of the pulmonary veins, beneath the mucous membrane of the air-cells, and are enveloped in fine cellular tissue; and except this cellular tissue the lung has no proper parenchyma, its structure being entirely filaments-vascular. The lungs are supplied with blood by the *bronchial arteries*, derived from the thoracic aorta; these vessels run along the bronchial tubes, subdivide as they proceed, and form a minute net-work on the attached surface of the bronchial mucous membrane; the blood they convey to the lungs is retunred to the vena azygos, or superior cava. The nerves distributed to the lungs are derived from the eighth pair, and a few filaments from the sympathetic.

HEART AND PERICARDIUM.

The pericardium consists of two layers, an outer, or proper fibrous layer, and an internal, or serous layer. It is of a conical form, the base below connected to the central division of the cordiform tendon of the diaphragm; the apex above corresponding to the great vessels at the base of the heart, along the out coats of which the fibrous layer is gradually lost; it is connected laterally to the pleura and to the pulmonary vessels, and the phrenic nerves, one on either side, run in close contact with it to the diaphragm. Upon laying upon the pericardium, the cavity of the serous layer is exposed, and, like all serous membranes, consists of two portions—a parietal layer, which lines the inner surface of the fibrous pericardium, and a visceral layer which lines the outer surfaces of the heart and great vessels. Covered by the serous membrane, when the pericardium is fully opened, we bring into view the right auricle, the venæ cavæ, the left auricular appendix, the right ventricle, the tip of the left ventricle, which forms the apex of the heart, the aorta, the pulmonary artery and the anterior branches of the coronary vessels, with the ramifications of the cardiac nerves. Upon turning up the heart its posterior surface will be brought into view, presenting the left auricle, proceeding to which, on either side, are the pulmonary veins, and the left ventricle.

The serous membrane may be traced in the following manner:—after having lined the fibrous pericardium it is reflected on the superior cava, the aorta and the aorta, and the pulmonary artery as these vessels are passing through the fibrous membrane, ascending highest, however, upon the aorta; inferiorly it is partly reflected around the inferior cava, as this vessel pierces the fibrous pericardium to enter the right ventricle, and laterally it is reflected upon the pulmonary veins as these vessels pierce the fibrous pericardium to enter the left auricle; from these different points it reaches the surface of the heart which it completely covers.

The heart, of a conical shape, is situate obliquely between the lungs, its base being superior, posterior, and to the right side its apex pointing towards the cartilage of the sixth rib of the left side. The axis of the heart is obliquely from right to left, and from behind forwards. It is retained in its situation by the great vessels and the reflections by the serous membrane.

The heart consists of four cavities, two auricles and two ventricles; the auricles are separated from each other by a partition, called septum auricularum, the ventricles by the septum ventriculorum. We shall examine these cavities in the order of the circulation.

The right auricle is placed between the two venæ cavæ, the blood conveyed by which it receives and transmits to the right ventricle; the small loose portion is called the *auricular appendix*, and the portion between the cavæ the *sinus of the auricle*. Upon laying open this auricle, by a perpendicular cut from the superior cava to within a few lines of the entrance of the inferior cava, and by a second cut from the centre of this, at right angles towards the auricular appendix, the following parts present themselves.

PATHOLOGY OF ECCHYMOSIS.

Ecchymosis literally means an effusion or escape of blood external to its vessels —"cruoris in vicina spatia ob vasorum apertionem effusio." Ecchymosis is defined, an effusion or extravasation of blood from the capillary vessels, which are lacerated or broken, into the subcutaneous cellular tissue, and into the tissue of different vicinal organs.

It may be spontaneous, or produced by external injuries, as contusions, falls, blows, wounds, &c.

Spontaneous ecchymosis is extremely rare, and its reality is very much doubted,

though attested by some eminent writers of this century. M. Baumes describes an ecchymosed tumour, which was not caused by any external violence, (*Traite Elementaire de Nosologie*, T. 1, p. 322, 8vo. Paris, 1806.); and M. Rullier expresses much satisfaction in being able to attest this fact, as he had occasion to see several ecchymoses of this kind, which supervened without any appreciable external causes, on the hands and arms of two women, who otherwise enjoyed the best health. (*Rullier Dict. des Sciences Med. Art. Ecchymose*, T. 11, p. 112, Paris, 1814.) M. Rieux informs us that it is not uncommon to see persons go to bed in apparent good health, and rise next morning with an ecchymosis, or red spot, on the eye-lid. It does not follow that what this writer chooses to term ecchymosis is really ecchymosis, as defined by medico-legal writers. (*Theses de la Faculte de Medecine, de Paris*, 1814, No. 63.) There is also a dark colour round the eyes of some women during menstruation, which remains to be proved to be acknowledged ecchymosis; and there are individuals whose skin is so delicate and sensitive, that the slightest external causes will produce a well-marked black discoloration—but this may not be true ecchymosis. It is important to observe that spontaneous ecchymosis is doubted by the majority of the medical profession, and that the imperfect accounts now quoted are unsatisfactory, as they do not state whether the usual changes of colour, which occur in ecchymosis from injury, were really observed, and it is to be borne in mind that there could not have been an anatomical examination of the cellular tissue during life.

Contusions or bruises, which are synonymous, are always followed by solutions of continuity of capillary vessels, and sometimes of larger arteries or veins, and by extravasation of blood into areolæ or spaces of the cellular tissue, or into the tissue of different organs.

The effect of a severe blow, on the skin during life, is a bruise, or a laceration of capillary vessels, or a disorganization of these or of the areolæ of the cellular subcutaneous tissue, and more or less extravasation of blood which, in the living body, generally coagulates to a greater or less extent, after an indefinite period of time.

The ecchymosis has also been applied to false aneurism, thrombus, to certain diseases accompanied by black or dark spots on the skin, and hence the term scorbutic, hæmorrhagic, ecchymosis, petechiæ, vibices, &c., but modern pathologists generally confine it to the blackness produced on the surface and deep-seated organs by external injuries; though some extend it to the appearance of organs after disease, not caused by external injuries.

Ecchymosis is generally said to be situated in the subcutaneous cellular tissue, but it is sometimes observed in the interstices between the muscles under the periosteum, in the serous membrane which covers the viscera, in the cellulous layer which accompanies the nerves and blood-vessels, and in the tissue of the different organs. The petechiæ, and vibices which appear in typhus, plague, pestilential diseases, blue cholera, small-pox, purpura hæmorrhagica, and scurvy, are termed ecchymosis by some writers. Thus Rullier maintains, that the morbid exaltation of the organic sensibility of the exhalent vessels of the subcutaneous cellular tissue and of the different organs is sufficient to retain the blood in these vessels, and to form ecchymosis without extravasation—which probably occurs in spontaneous ecchymosis, or in slight external causes which are incapable of rupturing the sanguineous capillary vessels. (op. cit. 117). This spontaneous ecchymosis is termed sugillation by most modern medico-legal writers, and is caused, according to Van Swieten, by the impulsion of the blood in the small vessels (exhalents) which are affected differently from their normal condition, by admitting red blood, though they are unbroken, "Sanguis ingreditur vasa aliena, integra tamen." (Comment. in Boheraav. Oph. 324.)

In the petechiæ, vibices, and according to Rullier, in slight ecchymosis, in the advanced stages of typhous, low fever, pestilential diseases, and survy, the spots are caused by atony, or general relaxation of the organs, and especially of feebleness of the exhalent capillary vessels. These are incapable of resisting the blood, which is now attenuated and somewhat decomposed, and which escapes passively, and is effused by a kind of expression or transudation into the subcutaneous cellular tissue, or the viscera, and even into the tissue of muscles, as is frequently observed in the body of those who die of scurvy. It should be remembered that the blood thus effused does not coagulate in the above named diseases, and it is not clearly stated by authors whether the colorations remarked in ecchymosis from

external injuries occurs in the spontaneous species of the disease.

In ecchymosis from external injuries occurring during life, the spot is at first more or less red, bluish, and finally livid, or blackish, bluish, or leaden coloured; it gradually changes, becoming violet, yellow or citron colour, and it finally disappears in most cases. While undergoing those changes, the ecchymosis extends and enlarges by degrees; its circumference is less marked than its centre or the point first affected. The causes of this series of phenomena are in the state of the blood and cellular tissue, in fact, when the blood ceases to be submitted to the circulatory action, it loses by repose its vivid red colour, and becomes brownish, and tends to coagulate; but as there is a constant vapourous secretion in the areolæ of the cellular tissue, its molecules are successively diluted, and then dispersed by degrees by the tonic action of the tissue into the surrounding areolæ, and are finally removed by absorption.

When subcutaneous ecchymosis becomes painful, inflamed, and opens spontaneously, it discharges a fluid somewhat similar in appearance to lees of wine, which is an altered state of the blood.

It is also known to every observant practitioner, that ecchymosis caused by external injury may not occur immediately after the violence, or for some hours or days afterwards; for example, for ten or fifteen days, and that the muscles and deep seated organs may be ecchymosed, though the skin remains natural.

Diagnosis between Ecchymosis and Cadaverous Lividity.

Cadaverous lividity, livor (or suggilation, properly so termed by modern medico-legal authorities) occurs in the most dependant parts of the body. It is caused by congestion of the blood in the capillary vessels, which are distended; they often lose their vitality, but there is never any effusion or extravasation of blood in the areolæ of the subcutaneous cellular tissue. On incising the skin, the dark or brown colour found on its surface does not extend to the subjacent parts.

Cadaverous lividity generally commences some hours after death, when the body begins to cool, its members becoming stiff express the blood, which is still fluid, into the capillary vessels, but in some cases lividity commences before death has taken place or is real. Thus during the agony of various diseases, the nails, hands, feet, the nose, lips, lobes of the ears, or the whole surface of the body, as in blue cholera, acquires a livid or violaceous tint, while in other cases the lividity does not occur for three or four days after death. This phenomena is chiefly observed when the blood has lost its consistence, when it is accumulated in the right auricle of the heart and trunks of the venæ cavæ, and when the abdomen is distended with gas. Under such circumstances, and according to the anatomical disposition of parts, the blood contained in the right auricle and venæ cavæ is forced into the veins of the neck and head, the vessels of the brain become engorged, the face acquires a marked tint, the eyes which were flattened and depressed fill and brighten, the pupil contracts, and the nasal membrane ruptures in some cases, and gives origin to a discharge of brownish blood from the nostrils. All vascular organs may become congested in the same manner. As the lungs for example.

In the last case the reason is obvious. All the blood of the body is returned to the lungs for the purpose of being oxidized or arterialized during respiration, but when the vital powers are greatly diminished, the last efforts of the heart fill the vessels of the lungs, distend and engorge them, giving a livid tint, more or less marked and extended, sometimes approaching to black, while the weight and density of the lungs are increased. The dark colour of the lungs has been mistaken for gangrene, but on cutting and washing the part with water the blackness disappears. The coloration is not equally intense on all parts of the lungs, and differs according to the position of the body while cooling after death. Thus, if the individual expires on the back, which is the most common position, the livid colour of the lung will be observed on the dorsal portion, if on the side or face, the lividity will be lateral, or on the anterior surface of the lung or body.

We also distinguish cadaverous lividity from ecchymosis as the former seldom occurs until some hours after death, occupies the most dependent, or lowest part of the body on account of the gravitation of the blood, and is caused by distention and not by rupture of the capillary vessels of the skin. It is only necessary to incise the livid parts to show that their tissue is normal or sound. In fine, cadaverous lividities disappear in a few hours, when the body is placed in an opposite position to that in which they occurred.

In an indefinite period after death the blood becomes soft, gelatinous, or like jelly, and it has been found to form concretions somewhat analogous to the buffy coat observed when blood is drawn in inflammatory diseases and during pregnancy. These concretions are very seldom found, and are usually seen in the heart and large vessels, and are generally considered to occur during the agony of death. Simulating lividities are attempted by rubbing certain parts with antimony, lead, &c., but these are readily detected.

Contusions inflicted on the Body after Death.

Persons have inflicted blows and injuries on the body after death to gratify their barbarous propensities, or for the purpose of accusing an innocent person of murder. It is, however, easy to distinguish between contusions and wounds inflicted during life, before life has entirely ceased, and after real death has occurred. When injuries are inflicted while the body is still warm, the blood fluid, and the muscles capable of contraction, the appearances will slightly resemble those inflicted during life. But in this case there will be no tumefaction on the edges of a wound, the blood which escapes from the extremities of the divided vessels does not form a solid clot, nor does it adhere to the surface of the wound, and there is no extravasation of blood produced in the areolæ of the cellular tissue.

But when the contusions are inflicted after the body is cold, the members rigid, the blood arrested in its vessels having lost its fluidity, the lips of a wound will be pale, placcid, and not swollen or separated from each other, as when inflicted during life. All this shows that life had ceased, and that there was no reaction after the injuries.

If a dead body be thrown from a height to the ground, or other violence applied, the bones may be fractured, and the liver, spleen, brain, and other organs ruptured. But in such cases there will be no engorgement or extravasation of blood in the adjacent tissues.

It is also important not to confound black spots, which appear when the body is in an advanced state of decomposition, with ecchymosis, but these can be readily distinguished by the fetidity and other appearances of the body.

An incised wound was made in the calf of a leg, *two minutes* after its separation from the body by amputation, and the gastro-cnemii muscles were divided. At the moment the wound was made, the skin retracted considerably, causing a protrusion of adipose substance, which only allowed the escape of a small quantity of blood. In twenty-four hours the edges of the wound were red, bloody, and everted; the skin was not in the least degree tumefied, but flacid. On separating the edges, a small quantity of fluid blood escaped, but no coagula adhered to the muscles. There was, however, at the bottom of the wound, a small qauntity of coagulated blood, but the coagula were so loose as readily to break down under the finger.

In a second experiment, made *ten minutes* after the separation of the limb, the skin had lost its elasticity, the edges of the wound were very slightly everted, and scarcely any blood escaped from it. On examining the wound after the lapse of twenty-four hours, the edges of the incision were pale and perfectly collapsed, presenting none or the characters of a wound inflicted during life. There were some slight coagula at the bottom of the wound. It was found, by other experiments, that the longer the wound was deferred after death, the less were the appearances like those of a similar injury inflicted during life. Thus, when the wound was not made for two or three hours after the limb was removed from the body, although a small quantity of blood was effused, no coagula were found. The edges of an incised wound made twenty-four hours after death, are yielding elastic, in close approximation, and free from any coagula of blood. Such are the conclusions of some of our medical jurists, and they accord with those of almost all modern medico-legal authors.

It is to be recolected, that contusions or wounds, are most likely to be inflicted, as in Greenacre's case, immediately after apparent death, that is, before real death, in the strict physiological sense, has taken place.

Hyperanthera Moringa.—The root of this tree is said to possess all the stimulating properties of the horseradish; it is used in the treatment of those cases of beriberi, which are attended with low action and debility; it diffuses warmth over the abdomen, and appears to encourage a warm perspiration; and, in the flatulent distention of the abdomen in confirmed cases, is a grateful tonic.—*Malcolmson on Beriberi.*

The London Medical

AND

Surgical Journal.

Saturday, July 1st, 1837.

DEATH OF HIS LATE MAJESTY.

(From our Windsor Correspondent.)

Our readers will have perceived that we gave the only correct information which appeared on the hopeless nature of the late King's disease, which was borne out by his demise, and is still further corroborated by the autopsy which we subjoin. Our animadversions on the concocted bulletins were loudly demanded, and leave no doubt in the public mind, that no reliance whatever is to be placed on such documents. It will be obvious to our readers, on perusing the real and fatal diseases of the revered monarch, there could not be the slightest hope entertained of his recovery; and yet the bulletin-makers assured the public that he was able to transact the kingly offices to the very hour of dissolution. The case is also replete with instruction, for it was announced, that great benefit was derived from the use of the inefficient medicine called *senega*—in organic disease of the heart, effusion into the chest, and disorganization of the kidney. This is a salutary lesson to ordinary practitioners, who generally maintain that such degenerescences in an aged subject are generally incurable. The following evidence proves the correctness of their conclusion :

POST MORTEM EXAMINATION OF HIS LATE MAJESTY.

On examining the mortal remains of his late Majesty William the Fourth, the following appearances were noticed :—

In the right cavity of the chest there was an effusion of about fourteen ounces of serous fluid.

The lung on that side was nowhere adherent, the vessels of the lower lobe were very much tinged with blood, and the air-cells contained a mucous and serous fluid having a bloody tinge.

The left lung adhered generally and with great firmness to the surface of the pleura lining the chest; these adhesions appear to have resulted from former attacks of inflammation.

The vessels of this lung were also tinged with blood, and its lower portion was somewhat indurated.

The rings of the trachea and bronchi were ossified to a great extent; and the lining membrane was of a dark colour, in consequence of the distended state of the vessels.

The pericardium adhered universally to the surface of the heart; but these adhesions were slight, and appeared to be of very recent formation.

The heart itself was large, and softened in its texture. Its right side was extremely distended with blood, but exhibited no marks of organic disease.

On the left side of the heart the mitral valves were found to be ossified, and the three semilunar valves of the aorta were in the same state. The ossification was in two of them to such an extent, that it must have materially interfered with their functions.

The coats of the aorta were much thickened, and on its inner or lining membrane there were several deposits of earthy matter.

The liver was somewhat enlarged and hardened, and was of a granulated structure throughout.

The gall bladder was extremely contracted, and contained but little bile.

The spleen was increased to double its natural size, and a large portion of its

surface was covered with a cartilaginous deposit.

The pancreas was enlarged and indurated.

The stomach and intestines were healthy, except at one part of the large intestine, which was narrowed by a thickening of its inner membrane.

The right kidney was quite sound, but the left was unusually vascular, and exhibited a granulated appearance. The investing membrane adhered very slightly to it.

The bladder was in a healthy state.

Signed by

M. J. Tierney, Astley Cooper,
W. F. Chambers, Robt. Keate,
David Davies, B. C. Brodie,
Ed. Duke Moore, Apothecary to the Queen.

Windsor Castle, June, 20, 1837.

ROYAL COLLEGE OF SURGEONS.

Conclusion of Professor Owen's Lectures on Comparative Anatomy.

On Tuesday last Mr. Owen concluded his short, but highly interesting and instructive course of lectures on Comparative Anatomy. The theatre of the College was somewhat more than half full; and we wonder the more at this, in consequence of it being generally understood that the learned professor intended to conclude his labours, by a brief allusion to the origin of the foundation of the professorship, and the benefits which the body of the profession at large were likely to receive from the new and *apparently* liberal proceedings of the council.

Sir Astley was, as usual, at his post; on this occasion he was supported by Sir Anthony Carlisle, Mr. Vincent, and Mr. Stanley, who were the only members of the council present. We do not recollect "even in our boyhood days" to have seen the worthy Baronet in apparently better health or spirits: not a single observation of the lecturer seemed to escape him; he was all energy; the preparations in illustration of the lecture passed rapidly from the hands of Mr. Owen to those of Sir Astley; and so much did the latter identify himself with the subject, that upon several occasions he actually proceeded to demonstrate the preparations to those around him, to the no little confusion of Mr. Owen.

The subject of the lecture was the Comparative Anatomy of the Teeth, and we only regret that the absurd and foolish regulations of the few self-elected individuals who have taken upon themselves the management of the affairs of the College, should have cramped Mr. Owen as to time, and thus have deprived the members of the only return ever offered them in the shape of compensation for the money they have contributed, not only to the erection of the new building, the support of the museum, library, and those deserving individuals under whose management both these departments are placed, but also to the support of the *ignobile pecus* who form the court of examiners, and who cooly pocket a *third* of the diploma fee for THEIR SERVICES!

The truly rapid sketch which Mr. Owen took of the developement and classification of the the teeth in the various classes of animals, was necessarily most imperfect. The idea of giving even a faint outline of these organs in the various groups of animated nature "in one short hour," is too absurd to require comment; to do justice to their investigation in the *human subject* took a quarto volume from the pen of Hunter, and occupied many an hour of that great man's valuable time; and knowing this we wonder that Mr. Owen would have submitted his judg-

ment to any regulation as to limitation of time which the *enlightened* council might have imposed upon him. Feeling the awkward situation in which he was placed, the learned professor had to draw upon the patience of his audience a half hour beyond the time allotted to the lecture; when, evidently finding the absurdity of attempting to proceed in the subject further, with advantage to himself or his hearers, he terminated abruptly, contenting himself with enumerating the difference in the number of teeth in the child and in the adult. Mr. Owen in a neat address, then complimented the worthy baronet on the many contributions which he had given, from time to time, to the Sciences of Anatomy and Physiology, and held Sir Astley Cooper f th as an example for all those to follow who were engaged in the arduous pursuits of our profession, and who felt desirous to arrive at any eminence in it. "The name of Cooper," said Mr. Owen, "will live for ages. Your discoveries, Sir, (addressing the worthy Bart.) and unwearied exertions in the practical part of your profession, have already reached the four quarters of the globe. You are as well known abroad as you are within these walls. And I cannot allow this opportunity to pass, sir, without returning you my heartfelt thanks for the intense interest you have taken in my humble endeavours to elucidate the opinions of your great predecessor, John Hunter."

That Mr. Owen did not here conclude with this just eulogium on the merits of Sir Astley Cooper we regret; for much as Mr. Owen may feel personally towards the individual members of the council, in making the professorship, and appointing him to perform its duties, it makes very little matter to the body of the profession at large, s long as the professorship is ably filled, and is likely to be of public utility. We are sorry then that Mr. Owen did not remain silent on this head; to say the least of it, it was very bad taste; particularly as there have been, within the last year, certain proceedings upon the part of the council, collectively and individually, which call for immediate attention; and of which it shall be our duty, in a short time, to take notice.

NON CONGENITAL HYDROCEPHALUS.

Resolutive treatment.—Practical Reflections.

Hôpital dit de l'Ecole.—CLOQUET.

An infant eight months old, weak constitution, was in good health till he was five months old; at this period he was seized with violent convulsions.

A meningitis was suspected, and the child was treated accordingly. Leeches behind the ears; cold water applied to the head, sinapisms to the feet; great relief. The child became dull, morose, and fell into a lethargic state; great agitation during sleep, sudden starts at waking, and convulsions came on occasionally. The size of the head increased remarkably. The parents took it to the hospital, and the following symptoms now exist.

Head very large; separation of the bones of the skull; the forehead very prominent; depression of the angle formed by the occipito-frontalis lamina; distention and thinness of the skin covering the sutures; transparency of the fontanelle; pressure on these parts causing remarkable fluctuation, great diminution of the ocular and auditory faculties, general weakness in all the limbs; the head unable to bear its own weight, falls on the shoulders, or on the chest.

With these symptoms it was easy to ascertain the existence of hydrocephalus; application of two large blisters on the head, calomel to be taken internally. This treatment was commenced only within two days; later on we shall give its results.

The manner in which this case of hydrocephalus first shewed itself is worthy of notice. Convulsions in the first instance, but on what did these convulsions depend? Where they caused by arach-

nitis, as was orignally supposed? This would be very difficult to decide. We are certain that convulsions often form part of the symptomatology of hydrocephalus, so that in this case the effect might have been mistaken for the cause. Boyer was of opinion that hydrocephalus was manifested shortly after birth. This state may have commenced during the intra-uterine life, so that it might be considered as congenital; such perhaps has been the case we have here related.

Revulsive medication, by the aid of blisters and calomel, may be very useful, as examples of cure by this method have been given, but the disease must not have made such progress as in the case here stated. The cephalic paracentesis in cases of hydrocephalus, has not been renewed since the fatal experiments made by Lecat.

Having observed that the patients generally died when the *poche* was opened, either spontaneously, or by the hand of the surgeon, this operation has been quite given up in France. Boyer condemned, in the most decided terms, puncture for hydrocephalus, the same as he had done for hydrorachis; we have nevertheless seen a case of this last disease cured by several punctures made with a very small needle, so as to prevent the entrance of air in the *poche sereuse*. Could not the same plain method be pursued for certain varieties of hydrocephalus? This is no longer doubtful, for those who are aware that Graefe succeeded once in three times in curing hydrocephalus, by the use of repeated puncture cephalocentesis. If Lecat failed in this operation, it is perhaps because his plan of leaving the canula permanently, is very defective.—*Continental and Brit. Med. Rev.*

SCIRRHOUS INDURATION OF THE NECK OF THE UTERUS.

Amputation.—Cure.

By Dr. Cazenave.

A lady had for ten years been troubled with an affection of the womb. A surgeon having erroneously attributed the symptoms to a syphilitic affection, prescribed mercury, which induced several hæmatemesis, bnt had no advantageous effect on the womb. Other practioners were called in, and found commencement of a disease of the neck of the womb, but as the patient would not consent to a full examination, only a few palliatives were prescribed.

Later on, the speculum was applied, the *museau de tanche* had increased in size, was rather hard, rough, and painful. There was also on the neck of the womb an erosion, which soon disappeared. Various medications were recommended, though not regularly taken. Mr. Chomel was consulted, and ascertained the existence of a scirrhous tumefaction on the neck of the uterus; he advised immediate amputation, which was declined.

M. Cazenave being called in sometime afterwards, found this lady with a dark complexion, and the eyes dim: she complained of palpitation of the heart, and dumb pains in the uterus, which pains also extended to the thighs. She had severe colics, and pains in the lumbar region. There was slight effusion in the body of the uterus. This diagnostic being confirmed by the application of the speculum, it was decided that amputation of the neck of the uterus should take place.

A bivalve speculum was introduced, and the neck caught by Muzeux's long pincers, was gradually drawn outside the vulva. Other pincers were then used; but notwithstanding the repeated efforts, it was impossible to bring out the posterior lip, which was largely developed, and the incision was made in this position. The operation was difficult, but ended satisfactorily. The patient was put into bed, she fainted, but no further accident happened, and she recovered.

The separated tissues were evidently of a scirrhous nature; fibrous, cartilaginous, larger than a hen's egg, and weighed more than an ounce and a half.

We cannot too forcibly call the attention of practitioners to the necessity of using the speculum, as the best means of diagnostic in all affections of the womb. M. Cazenave's reflection on this subject are very judicious. He says diseases of of the body and neck of the womb are extremely common in large towns, and make considerable havoc, as females unfortunately only seek medical advice when these affections are far advanced, or because they attach no importance to slight indispositions, which being symptoms of greater evil, should attract attention.

For the last twelve months I have attended females in all ranks of life, having engorgments, schirrus or cancer, sometimes confined to the neck of the womb, and sometimes invading both the neck and body. Some of these patients suf-

fered very little, although degenerescence advanced rapidly; others felt acute pains when there existed only slight engorgements and superficial phlogosis, that very simple means, and particularly a horizontal position speedily removed. I have lately seen two ladies in whom a copious white discharge, pains in the stomach, hips, and thighs, thick and dark complexion, pains in the lumbar region, loss of strength, had scarcely attracted the attention of their medical advisers, who were nevertheless able men; but they only thought of one of the consequences —of the shadow of the evil; in short, of the white discharge; and were surprised that their irrational prescriptions did not produce a cure.

Suspecting the fact, I touched the neck of the uterus; in one patient I found a hard engorgement nearly scirrhous; and in the other, an ulceration as large in circumference as a sixpence. These mistakes are very common, and are productive of the most fatal results to the patient, injure the reputation of the practitioner, and very justly, as now we are furnished with the means of feeling and *seeing* the diseased parts, mistakes are inexcusable.

Since we have had so many enlightened men in the ranks of science, diseases of the uterus may be cured whenever the medical attendant will take sufficient pains to ascertain in time, the real state of the case, and however repulsive it may be to women's feelings to submit to an exploration by the finger or speculum, yet their own good sense will lead them to do so, if it be properly shewn that such a step is indispensably requisite.

This is the opinion of all practitioners who have any experience in diseases of the womb, to which many females in large towns are victims.

M. Lisfranc takes every opportunity of insisting on this important subject, and differs entirely from those persons who consider these diseases incurable, and leave persons afflicted with them to their fate. We have many examples to confirm us in our opinion, that uterine affections become incurable, might easily have been prevented, or their course arrested, had a proper degree of attention been paid to them at their invasion.—*Ib.*

PRACTICAL CONSIDERATIONS ON THE SPONTANEOUS EVOLUTIONS OF THE FŒTUS,

In cases of presentation by the Shoulder,

By Dr. P. Dubois.

In January last, M. P. Dubois made some practical observations on cases of presentation of the shoulder, in which the accouchement took place without the application of instruments.

In the majority of cases a natural accouchement is almost out of the question, when the shoulder is presented. Yet in the beginning of the labour the uterine contractions may still change the vicious position, and give a more suitable direction to expulsion of the fœtus; thus, the head may be bent, and gently pushed towards the superior strait, so as to engage it in a presentation by the summit; at other times the contractions carry their action on the inferior part of the fœtus, the head rises, and the pelvian extremities are engaged in the pelvis; in short, in a third hypothesis, the fœtus being very small, or in an advanced state of putrefaction, the head and thorax are engaged in the pelvis, and the accouchment takes place without the assistance of art, by violent uterine efforts

These terminations do not constitute what accoucheurs have termed *spontaneout evolutions of the fœtus.* In cases in which the accouchement terminates spontaneously, which indeed seldom occurs, the first effect of uterine contractions is to press and diminish the size of the body contained in the womb. The head is bent, and the shoulder presented in the excavation of the pelvis as far the dimensions of this canal will admit. The uterine contractions continue, the fœtus then has a slight rotation; the head, which was placed transversally on the ischion, is immediately carried towards the symphisis of the pubis, and the shoulder passes under this bone. Then appear successively at the vulva the whole length of the arm, the side of the chest, the belly, the hips, and pelvian extremities; so that the trunk successively drawn towards the vulva, performs an evolution analogous to that of the head in presentations by the summit.

The mechanism of spontaneous evolution is, as we have before stated, a rare phenomenon on which we can only depend in certain circumstances, and which sup-

poses a pressure nearly always fatal to the fœtus contained in the womb.

If we consder that, in order to effect this expulsion, the amniotic fluid must have nearly passed, and that the child feels the violence either of the efforts of the uterus, or the bony canal to be gone through, it easily understood that in the majority of cases, the infant is lost; so that spontaneous evolutions, if a relief to the parent, is almost invariably death to the child; some children, however, do survive. Thus in thirty-seven cases of spontaneous evolutions related in M. Velpeau's work, seven or eight children were born alive.

There was a remarkable case of this description at the *Maternité*. A woman was brought to bed of a boy, the presentation was natural. A second child presented the shoulder, and was engaged in the depth of the pelvis. The uterine contractions soon made it follow the movements we have already indicated, and it came in world alive, and by the efforts of nature; but it was very small, and the way it had to pass through had been recently traced by the first child.

The possibility of spontaneous evolutions being established, practical conclusions, which may be useful in the obstetrical art, should be drawn from it, and those circumstances in which the efforts of nature may be depended on, should be well understood, for without this precaution, the knowledge of this fact may be productive of the most fatal results.

In the beginning of a labour it is very difficult, if not impossible, to guess the cases in which the efforts of nature alone suffice to expulse a fœtus, when there is presentation by the shoulder. They can only be supposed; the following signs for instance, may serve as a guide to this knowledge.

In cases of twins, this evolution may seem possible; when the woman is well constituted, and the child expulsed is very voluminous, and the second presents the shoulder, it may reasonably be concluded that spontaneous evolution is possible; if, however, the efforts of nature were always depended on, the mistakes would be of a most serious nature.

When the infant nas long been dead, this evolution may be possible; in these two circumstances only, we may suppose it can take place.

But when the labour is more advanced, there are circumstances which are much more conclusive. The first condition for the fœtus to be expulsed is, that it should not be too voluminous; that it should be very flexible, and that the uterine contractions should be very energetic.

When after the rupture of the membranes there is presentation by the shoulder, and the resources of art are not immediately resorted to, the uterine contractions force the shoulder as forward as possible to the pelvis, but the head remains fixed in the length of the pubis, and the majority of cases, notwithstanding the evidence of the pains, the fœtus keeps exactly the same place.

It is true that after prolonged efforts of the woman, on examination, the shoulder will be found deeper seated in the pelvis, not because the fœtus has changed place, but the parts are swelled, and consequently have penetrated deeply into the pelvis. This is almost constantly the case, and indubitably proves that the efforts of nature will not cause expulsion, and that the assistance of art is necessary.

But when the accouchement is to be natural, the shoulder reaches the excavations of the pelvis, and the arm comes down in full length, and these parts draw nearer and nearer, while the uterine contractions succeed rapidly.

These signs indicate that spontaneous evolution is possible: if the shoulder continues to descend, and that the side of the chest extends to the perineum, it may be hoped that the accouchement will terminate naturally.

It is most essential to ascertain when spontaneous evolution is possible, for by avoiding the introduction of the hand, the woman is spared violent pain, and the danger always attendant on such practice.

In fact, when the fœtus which presented the shoulder is pressed in the superior straight, and the uterine contractions do not propel it forward, version must be immediately resorted to. When, on the contrary, the shoulder is pressed in the excavation of the pelvis; when the arm comes out; and when, under the influence of pain, the side of the chest is presented, the labour must be left to nature, and a difficult and dangerous operation is thus avoided.

This distinction is of the highest moment, for if practitioners neglected to attend to it, the consequences would be fatal.—*Ib.*

OBSCURE MEDULLARY DISEASE OF THE STOMACH.

By James Johnson, M.D.

A gentleman (Mr. Sandy) aged about forty-five years, became affected with uneasy sensations about the stomach or upper bowels, varying from an hour to three or four hours after taking food, especially the dinner meal. The pain was seldom acute, but rather it was a sense of distention, attend with eructations of air and acid, and continuing till the digestive process was finished. There was no vomiting or sickness—or scarcely any during the whole period of the disease, which lasted sixteen or eighteen months. At an early period of the malady, and many months before he came under my care, he passed, as was supposed, a mass of hydatids. It is probable that this was a mistake, and that the discharge consisted of gelatinous matters, which occasionally passed afterwards while I attended him. He had been attended by several medical gentlemen, none of whom could make up their minds as to the real nature of the disease, or even its precise seat. This was also the case with myself. When I first saw him, in July 1836, he was emaciated, sallow, and unhealthy in aspect. On stripping him there was no tumour visible or tangible in any part of the abdomen. But when he strained, there could be felt a very small induration, three or four inches above and to the left of the umbilicus, devoid of pain on pressure. This induration could not be always felt at first—but for the last two or three months of his life I could always feel it, and considered that it had got larger.

The phenomena of pain after food still continued, as well as the emaciation, without any fever or other constitutional derangement. About the middle of November he was seized in the night by syncope, and he was supposed to be dying. A surgeon in the neighbourhood was called up, and administered some cordial, by which he was revived. I saw him the next day, and found him much paler and more depressed than he had been. On examining the abdomen, there was a greater fullness in epigastrium than usual, but the distinct induration could no longer be felt. This puzzled me a good deal. There was no motion for three or four days, although operients were exhibited. At the expiration of this time a large substance was passed, after great difficulty, together with much fæces, and, on examination, there appeared in the commode what resembled exactly about eighteen or twenty inches of the ileum inverted and reddened. It could be lifted up on a stick and handled, without breaking to pieces. This created alarm, and I was summoned. I could not, at first, determine whether or not it was an organized substance. It was taken to the Anatomical School in Kinnerton-street, and there washed and examined carefully. It was found to be a coagulum of blood, deprived of much of its colouring matter, and so exactly taking the mould of the small intestine, that the valvulæ conniventes, &c., of the bowel were most beautifully exhibited. On examination of the abdomen now, the fulness of the epigastrium was gone, and the original hard knot was felt as usual. The bowels now became regular and healthy, as well as the secretions. But the pain and sense of distention, some hours after taking food, became gradually more and more distressing, so that, for some days, he could hardly be prevailed upon to take any thing but liquids. After the complete digestion of the food, he got free from all uneasiness, and was cheerful and comfortable till the next day after dinner. All this time there was no sickness or vomiting; but the flesh gradually and steadily vanished, till he became a mere skeleton. In December and January last, the pain and sense of distention after food became so great that he was almost obliged to starve himself, to avoid the tortures of digestion. This, of course, accelerated the emaciation, and he died exhausted on the 13th January, 1837.

The body was examined next day by Mr. Henry James Johnson, and Mr. Hutchinson, of Farringdon-street—a gentleman who had formerly attended the patient. The following were the minutes of dissection:—

"1. Body much emaciated.

"2. No induration perceptible *after death*, through the abdominal parietes.

"3. *Abdomen.* The stomach was concealed by the transverse arch of the colon, which overlaid it, and which, at its left extremity, was bound down by adhesions in the left hypochondrium.

"The stomach was small. The left lobe of the liver was intimately united to it; the lesser omentum being almost obliterated.

"On opening the stomach, its internal surface presented numerous projections

of medullary structure, which extensively occupied the lesser, the greater curvatures, and the cardiac end of the stomach, as well as the termination of the œsophagus in the stomach. The mucous membrane covering the morbid growths was ulcerated, as were the morbid growths, in some degree themselves.

"The pylorus was healthy. The termination of the duodenum in the jejunum was adherent to the morbid growth of the stomach.

"The intestines were healthy."

There can be little doubt that the hæmorrhage which formed the remarkable coagulum some weeks before this gentleman's death, proceeded from one of the ulcerations in the stomach—and there is great probability that the supposed cluster of hydatids discharged at an early period of the disease, was only some morbid secretions from the stomach or intestines. None of the medical gentlemen who saw this patient hit upon the true true pathology, some considering it one thing, and others another. I could not bring myself to think the stomach itself was the seat of the disease, from the absence of vomiting, and from the long interval between the taking of food and the commencement of pain. The adhesions between the stomach and the left lobe of the liver, as also those which bound down the transverse arch of the colon that concealed the stomach, contributed much to the difficulty of diagnosis. The case, however is very instructive, as showing how accidental circumstances may render the diagnosis and prognosis most perplexing and erroneous.—*Medico-Chir. Rev.*

THE EFFICACY OF LOBELIA INFLATA IN INFLAMMATIONS OF THE MUCOUS LINING OF THE BRONCHIAL TUBES.

To Henry James Johnson, Esq., Lecturer on Anatomy, in the School of Kinnerton-street.

Dear Sir,—I perceive from the Journals that a disease called Epidemic Catarrh, or Influenza, is very fatal in London—that it is attended with inflammation of the mucous membrane of the bronchial tubes—bears depletion badly—and that the old and infirm are the greatest sufferers. The experience and observation of a number of years devoted to the practice of medicine, have led me to two important conclusions in regard to the principal diseases of the chest.

1st. That when the serous membranes of the chest are affected, tartar emetic and the lancet are worth all other remedies put together, and those cases which will not bear the lancet, will bear tartar emetic in considerable doses.

2nd. That in those diseases affecting the mucous lining of the bronchial tubes, the lobelia inflata comes as near being a specific as tartar emetic, and the lancet in pneumonia and pleurisy. As a remedy for asthma you are, of course, acquainted with the virtues of the lobelia inflata. The observation, that it holds a controlling power over inflammations of the mucous membrane of the lungs, has never, I believe, been announced to the medical world, and originated with myself. I always intended to make it known to the public. My notes of the efficacy of this remedy I left in the United States. If I had them, I could give you more definite and precise information in regard to the therapeutic properties of the lobelia in such affections. But I have thought that a bare enumeration of the principle, that lobelia inflata is almost a specific for inflammations and engorgements of the mucous membrane of the bronchi, and for spasmodic constriction of those tubes, might be attended with considerable benefit at the present crisis. I have very little doubt, that if the remedy be tested in your present epidemic, experience will establish the principle beyond cavil or dispute,—*that lobelia inflata is, for inflammations and congestions of the mucous coat of the bronchial tubes, precisely what the lancet and antimonials are for inflammations of the serous membranes of the thoracic viscera.* I have never found venesection, antimonials, or purgatives, of much utility in severe catarrhal fevers. Used with moderation, the effects of such remedies are often equivocal, and in excess, always prejudicial. You have, no doubt, observed, that in violent catarrhal fevers, the mucous lining of the alimentary canal sympathises with the inflammation of the mucous membrane of the lungs. Hurried respiration, red tongue, weak and frequent pulse occuring in catarrhal affections, especially in debilitated children and in old persons, always indicate considerable danger. This is precisely the pathological state of the system, which the lobelia inflata is so well calculated to remove. Its action is so prompt and self-evident, that there

can be no mistake about its virtues. It is altogether a different medicine in this state of the system, from what it is when given to a person in health or differently affected. In the healthy state the lobelia is powerfully emetic, but in the inflamed, congested, or spasmodic state of the bronchial tubes, it neither vomits, nor produces any sensible effect upon the great organs of secretion. It seems to spend its force in diminishing the anhelation, in lessening the frequency of the pulse, in allaying the general febrile commotion, and in restoring the balance of the circulation and excitability. Why it should do so, is as difficult to explain, as why opium is not a narcotic when it has pain or spasm to allay. I use a saturated tincture made of the leaves, stems, and inflated capsules of the plant. Dose—one or two tea-spoonsful every two or three hours, oftener, or not so often, according to the urgency of the symptoms. I mix it with an equal quantity of the syrup of squills, or the oxymel. I have given to children, less than a year old, from twelve to twenty drops, without producing vomiting. When the remedy vomits, it indicates that the dose is either too large, or the condition of the system is not applicable to its employment. It produces its best effects when it creates no visible constitutional disturbance. When the anhelation comes on in paroxysms, a dose or two or quinine may be safely and advantageously used in the intermission, and the lobelia in the paroxysms.

Most respectfully your
Obedient servant,
Samuel A. Cartwright, M.D.
Of Natchez, Mississippi.

—*Medico-Chir. Rev.*

SALISBURY INFIRMARY.

Case of Recovery from the Insensibility of Intoxication, by the performance of Tracheotomy.

By S. Sampson, Esq.

This case is contained in the last volume of the Medico-Chirurgical Transactions. It reflects much credit on Mr. Sampson, of Salisbury, and is physiologically, as well as practically, interesting.

Case.—"Abraham Harris, aged 31, was brought to my house on the 31st of March last, in a state of complete insensibility from intoxication, the pupils being largely dilated, the breathing stertorous, and all voluntary motion having been lost for at least four hours before I saw him. The account given by those who came with him was, that he had attended a convivial meeting in the course of the day, at which he had drank freely both of beer and brandy; his companions admitted that he had taken more than a pint of the latter, but it has since been ascertained that his glass was repeatedly filled up, without his knowledge, with white brandy instead of water, so that it is impossible to calculate what quantity of spirit he had actually taken.

"I immediately used the stomach-pump, and drew off between three and four pints of fluid, a great part of which appeared to consist of brandy; after which tepid water, with ipeccaucanha diffused in it, was several times injected into the stomach, and after a while withdrawn again, with a view to excite vomiting, and thus rouse the energies of the brain. Finding, however, that these means failed, a strong solution of salt in water, and afterwards the sulphate of zinc, was repeatedly tried, without any better result; but he became, if possible more comatose, the countenance turgid, breathing more and more difficult; the pulse grew fainter, and was at last scarcely perceptible; at the same time the whole surface of the body was cold and clammy and he was insensible to every kind of stimulus. As he was some miles from his home, I had him removed to the Infirmary, and called a consultation of the other medical attendants, who arrived in the course of half an hour; but as, in addition to the above symptoms, he had lost the power of swallowing, and every appearance indicated the rapid approach of death, nothing was ordered for him but a turpentine injection, there being no ground to justify a reasonable hope of recovery.

"At this period it occurred to me whilst standing by his bed-side, that the comatose state in which he lay might not arise from apoplexy, but from torpor of the brain, in consequence of that organ being supplied with blood not duly oxygenated; for the shrill tone and extreme difficulty of respiration shewed the existence of collapse of the glottis, and imperfect transmission of air into the lungs, which might be accounted for by a paralysed state of the eighth pair of nerves and recurrent branches. With this view of the case, I again appealed to my col-

leagues, and strongly urged that a trial should be given to the operation of tracheotomy; for I could not but hope that if mechanical respiration were carried on for a time, the blood might regain its proper stimulant properties, and restore the energies of the brain and nervous system. Upon their consenting to give him this chance the operation was performed, without loss of time, by Mr. Andrews, under whose care, as surgeon for the week, the patient was now placed.

"The trachea was no sooner opened, than the distention of the veins about the head and neck subsided, the violent efforts of the extra-respiratory muscles ceased, and in about half an hour regular and easy respiration through the wound was completely established; at the same time the pupils became slightly sensible to the stimulus of light, and the pulse returned to the wrist. The immediate result of tho operation being thus far satisfactory, nothing remained to be done but to give directions for the frequent removal of the mucus which appeared at the wound, and to keep the surfaces of the incision asunder until the integuments and muscular layers had become agglutinated to each other; this latter object was effected by means of a piece of strong spring wire, with a bow at each end of it, which, being introduced in a bent state, was allowed to expand, and the opening in the trachea was thus prevented from being covered by the muscles, even during the efforts deglutition.

"He continued perfectly quiet during the night. but had no return of consciousness until the following morning, when he gave us to understand, by signs, that he suffered from headache and soreness at the pit of the stomach; there was a tendency to sickness, and the tongue was coated with a peculiar whiteness, as if rubbed over with chalk Moderate purgatives, followed by mild alkaline medicines, soon removed these symptoms, and a few leeches were applied to the throat, for the purposes of checking too high a degree of inflammation; after which no further treatment was required; but the wound being healed in about three weeks he was discharged cured, and has continued up to this time in the enjoyment of perfect health."

We think there can be little doubt that the patient was dying of asphyxia, the result of the depressing influence of alcohol upon the brain and nerves. The opening made in the trachea facilitated respiration, by establishing an aperture, not muscular and regulated by nervous influence like the glottis. In such a case, were the symptoms still more urgent, tracheotomy ineffectual, artificial respiration should, of course, be kept up. The effects of alcohol are transitory, and the view with which Mr. Sampson advised the operation is perfectly philosophical, and was, happily, successful.

BATH CASUALTY HOSPITAL.

Dissection of the Limb, twenty-one years after the External Iliac Artery was tied.

By G. Norman, Esq.

On the 13th of September, 1813, Mr. Norman tied the right external iliac artery, after Mr. Abernethy's manner, for an aneurysm of the femoral artery, immediately below Poupart's ligament. The name of the patient was Hicks, his age fifty years, and his case was detailed in the tenth volume of the Medico-Chirurgical Transactions. The operation was successful, the disease never returned, and although there were several slight threatenings of apoplexy, and habitual swelling of the feet and legs, the man lived until February, 1834, when he was carried off by cholera. The dissection of the limb is contained in the twentieth volume of the Society's Transactions. It is of course highly interesting, as an addition to our stock of facts.

Dissection.—"Independently of the appearances in the alimentary canal, characteristic of cholera, there was found some thickening and dilatation of the left ventricle of the heart, with deposition of body matter in the mitral valve. The arch of the aorta was somewhat dilated, and presented several patches of ossific deposit.

The arteries of the right lower extremity were filled with wax injection from the lower part of the aorta; the injection passing so freely as fully to distend the extreme branches in the foot and elsewhere. The following are the principal results of the subsequent dissection.

The external iliac vein was pervious, and presented nothing calling for remark.

The external artery was obliterated from the bifurcation of the common iliac to a point corresponding nearly to the lower edge of Poupart's ligament, and about one eighth of an inch above the origins of

epigastric and circumflexa ilii arteries; it there became pervious, and of equal size with the vessel in the opposite limb. The cord occupying the place of the obliterated vessel was of considerable size; the arterial coats perfectly distinct; and a probe introduced into its centre readily separated the adherent surfaces of the internal coat until it reached a point about an inch above Poupart's ligament, where all traces of the natural textures were lost, and replaced by a dense fibrous bundle.

About four inches below the crural arch, at the outer and posterior part of the fermoral artery, was feund a mass as large as a small walnut, composed of dense fibro-cellular substance: it involved the first part of the common origin of the profunda and external circumflex arteries, which, though obliterated, could be distinctly traced to the femoral. A portion of the profunda of about two inches was thus circumstanced; no injection having passed into it, and the remaining part of the vessel, which was of small size, being filled by the communication of its branches with other sources of supply.

The collateral circulation had obviously been mainly carried on by the ramifications of the internal iliac artery, which was nearly as large as the femoral. The manner in which it was affected may be described as follows:—

1. The ilio-lumbar artery, of very large size, gave several branches the lumbar plexus of nerves, descending in the substance of the anterior crural nerve as several elongated tortuous vessels communicating at the upper and outer part of the thigh with branches ordinarily derived from the external circumflex, and reaching to the fibrocellular mass already noticed. Other ramifications of the ilio-lumbar anastomosed with those of the circumflexa ilii, and also by that medium, on the one hand, with the inferior lumbar arteries, on the other, with the external circumflex of the thigh.

2. The obturator artery was proportionally much the largest division of the internal iliac, and with its branches very tortuous. Immediately before its passage through the obturator foramen, it gave off a large branch communicating with the epigastric at a very short distance from its origin, and forming aparently the chief source of supply to the epigastric, which was itself comparatively small. Directly after its emergence at the upper and inner part of the thigh, many of its external ramifications, much enlarged and very tortuous, inosculated freely with corresponding branches of the internal circumflex, also of a large size.

3. The gluteal artery was of average size: some of its anterior branches emerging on the dorsum of the ilium from among the gluteal muscles united with ascending branches derived from the external circumflex of the thigh.

4. The ischiatic artery was enlarged, and communicated tolerably freely with the posterior divisions of the profunda.

5. The internal pudendal astery was also of unsual size, and numerous tortuous twigs, collectively of considerable capacity, derived from its external branches, established a communication between the internal iliac and various branches, chiefly of the internal circumflex at the upper and inner part of the thigh."

We see nothing in this dissection, which calls for remark. It tallies with the experience drawn from the observation of other cases, and with what anatomy would lead us to expect. The re-establishment of the circulation through the agency of the circumflex and epigastric arteries, corroborates the necessity for caution in applying a ligature too near those, or indeed very near any large branch, in the operation for aneurism, or for wounds.

REVIEWS.

The Cyclopedia of Anatomy and Physiology. Part X. pp. 96. Edited by Robert B. Todd, M D., Licentiate of the Royal College of Surgeons, Dublin; Professor of Physiology and of General and Morbid Anatomy in King's College, London; Physician to the Western Dispensary, and lately to the Royal Infirmary for Children, &c., &c.

The number before us of this work contains contributions from the pens of Drs. Coldstream, Dutrochet, Hart, Alison, Jacob, R. Owen, Esq., and the editor.

The article, Entozoa, by R. Owen, Esq., or, as we would rather designate the learned author, Mr. Owen, contains an accurate account of all that is known about this interesting series of animals. Although we cannot point out anything original in Mr. Owen's Essay, yet the order of perspicuity with which it is written, and the well-executed wood cuts with which it is actually studded, entitle it to our heartiest commendation. We

cannot but admire the great ingenuity Mr. Owen displays in introducing Sir A. Carlisle into his *bibliography*, although the worthy knight's name only figures in a small note appended to the *Tænia Solium*, and this in an article *sixty-seven columns* in extent. That Mr. Owen places little, if any, value on the labours and observations of Sir Anthony Carlisle is quite evident from his referring his readers to some musty book-shelf in search of "Observations upon the Structure and Œconomy of Tænia," in the second volume of the Linnean Transactions (1795!) instead of embodying in the text what was deserving of being culled from the original. Notwithstanding our being referred to "many beautiful preparations" "preserved in the Hunterian collection," it is impossible to gather from the grammatical construction of the note we allude to, whether the "GREAT ANATOMIST" or Sir Anthony deserves the merit of having "injected with coloured size and quicksilver," the "nutrient canals of the *Tænia Solium*." Upon the whole we are inclined to view Mr. Owen's reference, and to the lucubrations of the learned member of the Council and Court of Examiners of the Royal College of Surgeons as a mere bibliographical compliment; particularly as the results of numerous examinations made by Mr. Owen to decide "the chief point at issue respecting the digestive organs of the tape-worms," viz., "whether the nutriment is imbibed by them through the pores which occur at the sides or margins of each point, or whether the entire body is dependent for its nutriment upon the anterior mouths from which the lateral canals commence," have uniformly corresponded with those of Rudolphi, to whose opinion Mr. Owen "entirely subscribes," in considering "the lateral orifices of the segments as exclusively the outlets of the generative organs."

Notwithstanding the name of Dutrochet is identified with the article Endosmosis, upon which he writes, yet this fact is not sufficient to justify the Editor in imposing upon the patience of his subscribers twenty-five columns about what could have been as clearly and usefully embraced in less than half that number.

The same observations will apply with much greater force to the article Extremity, contributed by the Editor himself, which occupies thirty-six columns (!), and which, without any exaggeration, should have occupied not more than ten. Out of this number nearly thirteen columns are taken up in describing the humerus, radius, and ulna; and even to this we should not be so much disposed to object, had there been a single redeeming feature in the shape of novelty of style, arrangement or perspicuity to compensate for the trouble of perusing the composition. But instead of one of these qualities—qualities esteemed in the present day as essential, not solely to perfection in composition, but to the rendering of the most unpretending essay at least intelligable; we are presented with a minute description of edges, which are always very imperfectly defined, and sometimes not present; grooves running in their wrong places, and but cursory allusions made to parts whose importance demands the greatest attention. These imperfections are the more to be regretted as the writer of them evidently wishes to appear anxious to smooth the path for his young reader; a desire which he thus expresses when speaking of the Fibula:—"A knowledge of the edges which separate these surfaces, will assist the student in understanding the position of t h surfaces themselves."

One or two selections from the thirty-six columns will be quite sufficient to satisfy our readers that these remarks are not hyper-critical. In describing the humerus the learned Editor says,—"At the junction of the middle and inferior thirds we notice a very slight and superficial groove passing downwards and inwards, and very much resembling what one would imagine might be produced by an attempt to twist the bone while yet in a yielding condition, the inferior third having been twisted inwards and the two superior thirds outwards. This groove indicates the spiral course from above downwards and from without inwards of the musculo-spiral or radial nerve. Below this groove is the inferior third of the humerus, the anatomical characters of which are very distinct from those of the remaining parts of the bone. A prominent and rounded ridge, continuous with that already noticed in connexion with the greater tuberosity, passes vertically down in front of it; from each side of this ridge a smooth surface inclines backwards, forming an inclined plane on each side of it, the external being larger and more distinct than the internal."

Now if this "very slight and superficial groove" originates at the junction of the middle and inferior thirds of the humerus, and if the inferior third of the humerus is itself below this groove, we defy, not only

the student, but Dr. Todd himself, to point out the portion of the humerus it occupies; and for this simple reason, that, according to the description, there is no portion for it to occupy, for it commences at the junction of the middle and inferior thirds, and yet the inferior third is below it! This beat the Irishman's success when he shot at nothing! Had the Editor contented himself with saying that a shallow groove occupied the middle third of the humerus, giving the bone a twisted appearance, and that this groove corresponded to the course of the musculo-spiral nerve, every person would have known what was meant. And we would not even object to his saying that it was directed "from above downwards, and from without inwards," though probably the "above" and "without" are superfluous. In the description of the scapula we find the following:—"Above the spine of the scapula is the fossa supra-spinata, which lodges the muscle of the same name, formed in front by the scrapula, behind by the spine, both surfaces being slightly concave. Below the spine is the fossa supra-spinata much larger than the preceding, slightly convex, except towards its anterior part. This fossa is formed by the scapula below and the inferior surface of the spine above; it is limited in front by a ridge which proceeds downwards and backwards, from the glenoid cavity to the inferior angle, and bounds behind a surface which gives attachment to the teres major and minor muscles."

Was there ever such confusion as this? We are told the fossa supra-spinata is formed in front by the scapula, and behind by the spine; but we are directed to find it above the spine. when, according to the description, it should be before the spine. But to make the matter clearer, we are told that below the spine is the fossa supra spinata, and that this fossa is formed by the scapula before and the spine above. Now when it is the scapula itself which is under consideration, it is worse than faulty to say the whole scapula bounds part of itself. It would not be a whit more absurd, were we describing the liver, to say that the right lobe of the liver was bounded by the liver and so on.

We strongly recommend Dr. Todd to bestow his sole labour, in his capacity as Editor, to the very valuable work with which his name is in connection. We have every reason to believe he is most anxious to perform with skill and ability, the duties entrusted to him, and we trust he will, in future, run no further risks of defeating any reputation he may have achieved as the Editor of such a work, or injure the reputation of its forth-coming numbers, by such contributions as the article Extremity.

Dr. Hart, as usual, gives a concise and interesting contribution. In the article "Erectile Tissues" everything worthy of detail is placed before us in a clear and off-hand style, and is perfectly intelligible to the meanest capacity. So very evident is this, that we cannot but say the note from the Editor is not only uncalled for, but shows a great want of judgment. Why is it that the contributions of Drs. Benson, Hart, and one or two others, alone are subjected to these unrequired and unasked for commentaries? We might be able to answer the question.

The article "Eye," by Dr. Jacob, it is hardly fair to say anything upon at present, as it will not be finished until the next number; but by way of hint to the testy little professor, we trust he will give the merit due to those individuals whose discoveries in the anatomy, physiology, and pathology of the organ, are full as likely to hand their names down to posterity, as that of the discoverer of the serous layer of the retina! We know that Dr. Jacob (for we have heard him and have copious notes by us) in his lectures on the Eye, has been in the habit of indulging to excess in the freest criticisms on others. Whether it is his intention to do so in the continuation of the article, it is not, of course, our lot to know; but by way of a guide we beg to quote the authority of a lecturer and a writer, whose name will live as long as surgery is a science. Mr. John Bell in the preface to his work on wounds, says, "the author has used all that freedom with great names which the cause of truth and science requires: he has published boldly many criticisms, which he would not have ventured to mention in his lectures, or in private; for there criticism is no longer criticism, but the foul report and private malice of it works like a secret poison, against which there is no preventative or cure"

The article "Excretion," by Dr. Alison, like everything which comes from his pen, is clearly conceived, and elegantly executed. Its extent is twelve columns and a half.

The manner in which this, and the preceding numbers of the work, are published—the clearness of the type, the correctness of the wood cuts, and the quality

of the paper, are excellent. We conceive that Messrs. Sherwood, Gilbert, and Piper deserve well of the profession, and, we are sure, will receive its support. It is with every wish for the success of "The Cyclopœdia of Anatomy and Physiology," that we have thus freely criticised the present number, and we trust that in future the sole care of the Editor will be directed to the important position he is placed in, and not allow a desire of figuring in print, to interfere with the duties he has undertaken.

Ueber die Ursachen der grossen Sterblichkeit der Kinder des ersten Lebensjahres. 8vo. pp. 111. St. Petersburg, 1837.

For the Treatise before us Dr. Lichtenstaedt received the prize from the Imperial Economic Society of St. Petersburg. It contains a statement of the gross mortality among children in the initial period of life; its causes, natural and artificial; together with the means of remedying it. In Russia the proportion of deaths during the first twelve months of infancy is 270 in one thousand; which is above one-fourth of the whole.

De Ictero—Dissertatio Inauguralis, ab F. W. R. Riese, M.D. 8vo. pp. 30. Kiliae, 1836.

The author, in this thesis, gives a succient account of the nature, symptoms, and treatment of jaundice.

To facilitate the evolution of gall-stones he recommends, on the authority of Durandius, the internal administration of 10—30 drops of the following mixture, frequently repeated and conjoined with whey:—

(Recipe)

Æth. Sulphur.
Ol. Terebinth. āā partes æquales.

BOOK FOR REVIEW.

Supplement to the Flora Metropolitana; or, Botanical Rambles within Thirty Miles of London:—Containing an Index of both Latin and English names, time of flowering, and colour of the flower of the Phænogamous Plants enumerated in the Flora; with many new and additional localities procured last summer; and the height of the principal hills, &c, round London. By Daniel Cooper, A.L.S., Curator to the Botanical Society of London, &c. 12mo. pp. 36. Highley, London, 1836.

HYDROPHOBIA IN A CHILD.

The following singular case has lately occurred in Suffolk:—A little girl named Burch, about four years old, the daughter of a ship-wright residing in the Back Hamlet, died on Monday last, of hydrophobia. About two months since, the deceased, while teazing a small dog belonging to her brother, was bitten in the lip; and although the animal had not exhibited any appearance of madness, the parents had it destroyed. Surgical assistance was called in, and the child's lip sewn up; it soon healed, and she enjoyed excellent health until Saturday last, when she complained of illness. The distressing symptoms of the malady rapidly increased, and on Monday the paroxysms were frightful in the extreme. She was visited by most of the medical men in town, but their assistance was unavailing, and at four o'clock death put an end to her sufferings. We understand that the mother of the little sufferer, had just been confined with her eighteenth child, but only four are living.

[This is a very remarkable case, and shows the obscure nature of hydrophobia. It does not accord with the pathology, that the disease is a purely nervous or mental affection, as some have supposed. —*Ed.*]

Cantharis.—If we trust the experiments of M. Tommaso Pullino, cantharis must hereafter be considered as a most powerful antiphlogistic, instead of being one of the most violent and dangerous irritants. He mentions three or four cases in which he gave it a trial, in one (pleurisy) administering as much as eighty-five grains in sixteen days; his account is however very unsatisfactory. If carried too far, it produces stranguary, vomiting, small and frequent pulse, shiverings, vertigo, torpor, &c. &c.—*Annali Universali di Medicina.*

All communications and works for review to be forwarded, (carriage paid) to Dr. Ryan, 4, Charlotte-street, Bloomsbury-square.

THE

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NOTES OF LECTURES ON PHYSIOLOGY.

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SEMEIOLOGY.

Physiological Symptoms of Disease—Alterations in Sensation—Setting of the Teeth on Edge—Formication—Aura Epileptica—Sensation of the Foot being asleep—Tenesmus—Bad taste in the mouth—Itching—Cardialgia—Nausea—Looking glass of the stomach—Rationale of cold effusion in fever—Action of Emetics and Opium in cutting short a fever—Catarrh cut short by snuff—A stitch in the side—Spasm of the Diaphragm—Congestion of the Spleen—Sighing—Gaping—Hiccup—Angina Pectoris—Anxiety—The fidgets—Anxietas Labiorum—Alterations in thought—Morbid vivacity, hebetude, and Perturbation of thought—Insanity, delirium, Hypochondriacism, and idiotism—Alterations in voluntary motion—Fractures and Dislocations—Tetanus, epilepsy, hysteria, chorea, and palsy—Therapeutics—Difference between a remedy and an exciting cause—Indicatio morbi—Consiluim medendi—Indications of cure—Prophylactic curative; palliative and conservative indications--Dietetic, pharmaceutic, and surgical remedies—Hygeine—Phlogistic and antiphlogistic remedies—Baths—Cold, temperate, tepid, and hot baths—Highest temperature of a bath—Hot baths in luxations, cutaneous diseases, diabetes, and rheumatism—The Douche—The employment in mania—George the Third—Air—Change of air in Phthisis, chlorosis, dyspepsia, jaundice, hypochondriasis, and hooping-cough—advantage of smoky air in asthma—Gases—Disinfection by camphor, sulphurous acid, muriatic acid, nitric acid, oxygen, chloride of lime, chlorine and acetic acid—Thieve's vinegar—Diet—Diseases which require a vegetable, and those which require an animal diet—Animal principles—Principles which are most nutritious and least digestible—Dogs starved by too nutritious a diet—Proper diet for convalescents—Chickens not good in chlorosis—Advantages of grated beef—Scurvy from beef tea—Vegetable principles—Composition of gluten—Varieties of starch—Plants which yield arrow root, sago, tapioca, and salep—Cookery—Best mode of preparing food—Broiling, frying, roasting, boiling, baking, and stewing—The passions—The royal disease—Employment of the passions in nervous diseases, hernia, dislocations, and anticipated rupture of the uterus—Quack medicines—Efficacy of bread pills—Mesmerism and metallic tractors—Exercise—Circular swinging in mania—Shampooing—Medicines—Modes of administering medicines—Homœopathia—Instances of diseases which are caused and cured by the same medicines—Evacuant medicines.

(3.) Titillatio gingivarum, or the setting of the teeth on edge, is owing to unpleasant sounds conveyed from the ear by the chorda tympani. That these sounds produce a disturbance of the circulation of the blood in the gums, is shewn by the fact, that this affection of the gums sometimes goes on to hæmorrhage.

(4.) Formication comes on in the first stage of cutaneous diseases, before the eruption appears; and in fever before the hot-fit comes on.

(5.) The aura epileptica is owing to the abstraction of the nervous stimulus derived from the brain, in consequence of which sensation and voluntary motion cease; and the vessels at a distance are the first to feel the loss of this stimulus. This sensation does not follow any particular nerve, but creeps under the skin, where the nerves are sufficiently sensible to feel the retention of the blood.

(6) The sensation of the foot being "asleep," is a minor degree of the aura epileptica; pressure on the nerve of the leg having obstructed the passage of the stimulus from the brain. It occurs likewise in myelitis.

(7.) Tenesmus occurs, not only in diarrhœa and dysentery, but in pressure on the rectum, from scirrhus of the prostate gland, or from retroverted uterus; for the nerves of the part are capable of only one kind of sensation, whatever may be the nature of the stimulus applied.

(8.) A "bad taste in the mouth," is from vitiated secretion.

(9.) Itching of the skin is likewise from vitiation of the secretions, and comes on when a disease is going off, having terminated in secretion.

(10.) Cardialgia is from irritation of the coats of the stomach, from the vitiated secretion of muriatic acid. Use magnesia if the bowels are confined, because the muriate of magnesia which is formed, will open them. If the bowels are not confined use lime. Dr. Home recommends ammonia in these cases.

(11.) Nausea is owing to constriction of the vessels of the stomach, which excludes the blood. It comes on before vomiting, on the application of a strong stimulus, and in the cold stage of fever, in which case both the stomach and the skin have less blood than usual. On account of the great sympathy between the two latter, the skin is said to be the looking glass of the stomach. The cold stage of fever may be cut short by means of cold effusion, which makes the vessels of the skin and stomach contract to a degree incompatible with the longer continuance of the constriction. The hot-fit, therefore, comes on, and thus we substitute a milder fever for a severer form. A man gets a small fever every time he goes into a cold bath. Emetics and opium have the same effect in cutting short a fever, but they act on the skin indirectly, through the medium of the brain and stomach. On the same principal of causing a great constriction of vessels, a man not accustomed to take snuff, might cut short a catarrh by using it.

(12.) A stitch is a short spasm of some of the fibres of the diaphragm. Mason Good ascribes it to congestion of the spleen; but if that were the case we should have it regularly after meals, and it occurs as often on the right side as on the left. Sighing, gasping, hiccup, and angina pectoris, are all different degrees of affection of the diaphragm The same cause (exercise, for instance) which gives a boy the stitch, will give an old man angina petoris.

(13.) Anxiety arises from the retention, in any organ, of its natural stimulus; as in the lungs, bladder, and rectum. It is well seen in the cold stage of fever, in diseases of the heart, and in dyspepsia, after dinner. General anxiety, or "the fidgets," is from the retention of blood in the veins. It is excited by sitting still, or by the expectation of a letter, or by listening to an old story, or by fever in its cold stage. All these abstract nervous energy from the system; and the venous circulation, being the least energetic, is the first to suffer. Auxietas labiorum is very common in elderly females, and to relieve it they put one leg over the other, or lie on a sofa, or apply friction.

6. *Alterations in Thought.*—There may be either morbid vivacity of this function, morbid hebetude, or perturbation. Thought is preternaturally acute, whenever sensation is excited; and it is obtuse whenever sensation is depressed. It is irregular in insanity, delirium, and hypochondriasis. Idiotism is the best example of morbid hebetude of thought.

7. *Alterations in voluntary motion.*—These may arise from either of two causes. 1. Adventitious causes, as fractures and dislocations. 2. Morbidly increased, morbidly diminished, or irregular contraction of the voluntary muscles; as in tetanus, epilepsy, hysteria, chorea, and palsy.

THERAPEUTICS.

A remedy differs from an exciting cause of disease, only in the different degree in which they are applied, and the different circumstances in which they act. The indicatio morbi (or indication of the disease) was thought by Galen to be a display of what the disease required for its cure. The latter is now generally called the indication of cure (or consilium medendi). The indications of cure of four kinds:—1. Prophylactic; 2. Curative; 3. Palliative; 4. Conservative. The latter are designed to guard against relapse. We fulffl these indications by three classes of remedies:—1. Dietetic remedies, or hygiene; 2. Pharmaceutic remedies, or medicines; 3. Surgical remedies, or surgery.

I. *Hygiene.*—This may be either phlogistic or antiphlogistic. We shall consider the various remedies which come under the head of hygiene, in the same order in which we took up the Stimuli to

Irritability, and the Exciting Causes of Disease. 1. Caloric, and its abstraction (or heat and cold), including climate, situation, dress, bathing, &c. 2. Air, which comprises disinfecting gases, &c. 3. Aliment, which must be full or sparing in different circumstances: cookery falls under this head. 4. The passions, through the medium of which various modes of charlatanry exert their influence. 5. Voluntary motion, under which gymnastics and exercise of various kinds are to be considered.

1. *Baths.*—These are variously named, according to their different degrees of temperature. 1. Cold bath, up to sixty-five degrees. 2. Temperate bath, from sixty-five degrees to eighty-five. 3. Tepid bath, from eighty-five degrees to ninety-five. 4. Hot bath, above ninety-five degrees. The highest temperature that can be borne by the skin in a bath, is about a hundred and ten degrees. This is prescribed by Sir Astley Cooper in luxations The hot bath is used in fever, cutaneous diseases, diabetes, and rheumatism.

2. *Douche.*—The douche is performed by pouring a small stream, from a height, on the head, while the rest of the body is kept warm. It was brought into use for mania, and its inventor wished to try it on George the Third.

3. *Air.*—Change of air is favourable in phthisis, chlorosis, dyspepsia, icterus, hypochondriasis, fevers, pertussis, and in convalescence from all diseases. In asthma, some persons do better in a pure air, others in impure; and, as Dr. Home says, this, as well as all other remedies, must be regulated by the previous experience of the patient. He relates the story of an old asthmatic lady, who was cured by getting into a gypsy's smoky hut; probably from the smoke being a stronger stimulus. Frequently in hooping-cough, a change of air removes the titillation of the fauces, by changing the stimulus; as in the case of ulcers, the substitution of even a weaker lotion for a stronger will often prove beneficial.

4. *Gases.*—Various gases have been used for the purposes of disinfection. 1. Vapour of camphor, by the Arabians. 2. Sulphurous acid, by Home. 3. Muriatic by Guyton Morveau. 4. Nitric acid, by Carmichael Smyth; who obtained a reward for recommending it, although it had been employed thirty years before by Pringle. 5. Oxygen, by Selle. 6. Chloride of lime, by Labaracque and Alcock. Chlorine, by Cruikshank. Acetum aromaticum has been called "thieves' vinegar," because it was used by the thieves at Marseilles, during the plague, to protect themselves from infection. Home recommends a sponge to be filled with it, and suspended in the room which is sought to be disinfected.

5. *Diet.*—The diseases of repletion are polysarcia, calculi, &c., and these require a vegetable diet. Dropsy requires an animal diet. The following is a list of the animal principles, in the order of their nutritious properties:—Gelatine; 2. Albumen; 3. Stearin; 4. Elain; 5. Osmazone; 6. Fibrin. Stearin and elain exist in combination in the form of fat. The digestibility of these principles, is in the inverse ratio of their nutritious properties, so that gelatin, although the most nutritious, may not nourish most, the stomach not being able to digest it. Barry says that an animal may be starved, by giving it food too nutritious, or too concentrated. The dogs which Magendie fed wholly on sugar died of scurvy. Hence it is not good to give convalescents food of too nutritious a kind; and Dr. Baillie recommended "a tough old cock," in preference too a chicken, for a chlorotic patient. Grated beef on bread and butter, as containing a good deal of fibrin, would be better. Brodie boiled some beef to rags, and gave the liquor to six dogs, and the meat to six others; the former died of scurvy, the latter did well.

The following are the chief vegetable principles. 1. Fecula; 2. Glidine; 3. Zimome; 4. Gum; 5. Sugar; 6. Lignin; 7. Fungin. This is found only in cryptogamic plants, and stands in the place of lignin. Gliadine and zimome constitute gluten. Fecula is of various kinds, and is obtained from various plants. I. Common starch, from the germinæ, and solanum tuberosum; 2. arrow root, from the maranta arundinacea; 3. Sago, from cycas circinalis; 4. tapioca, from the tatropha Manihot; 5. Salep, orchis mascula, and orchis Morio.

6. *Cookery.*—Broiling is the best mode of preparing food, because it retains all the fibrin. Frying is the worst, because it leaves all the indigestible matter, and adds, oil or some fatty mater, which is more so. Roasting, boiling, baking, and stewing, are intermediate between broiling and frying.

7. *The Passions.*—Jaundice was formerly called a royal disease, because the person affected with it was recommended to live a kingly life, "ludis jocis et omnilascivia." The passions are made use of in the treatment of dyspepsia, hypochon

driasis, epilepsy, chlorosis, hysteria, mania, and almost all nervous diseases. Depressing passions are made use of in reducing hernia and dislocations, or to check the action of the uterus, when there is danger of rupture.

Quack medicines owe their efficacy to the passions. I cured one hypochondriacal case merely by saying I had known patients much worse who were cured by my remedy. This was pill of a crumb of bread which I sent, and the patient was cured. To a similar cause the influence of the passions, we must attribute the efficacy of animal magnetism (or mesmerism) of Parkinson's metallic tractors, and of the stroking of the body, recommended by Greatorex. In applying friction to the abdomen, it is best to use, not the palm, but the points of the fingers. The skin is by that means acted upon by five circles, and the alternation is beneficial.

8. *Exercise.*—This is part of the phlogistic regimen, and is employed in dyspepsia, chlorosis, icterus, hypochondriasis, paralysis, chronic rheumatism, and in convalescence from all diseases. 1. Sailing is recommended in chlorosis and phthisis 2. Exercise on horse-back was recommended by Sydenham for the same diseases as sailing. 3. Swinging is also esteemed beneficial in phthisis and chlosis. 4. Circular swinging is Cow's remedy in mania. 5. Shampooing is recommended by Balfour in gout and rheumatism. It acts as a strong stimulant, and makes the vessels contract.

II. *Medicines.*—The classification of medicines, like that of poisons, is necessarily imperfect, because many articles may be put anywhere. Medicines are generally arranged according to the organs on which their effects are displayed. They may be divided into those which act on the functions of animal life (the secretions and evacuations), and those which act on the functions of animal life; as, for instance, the action of strychnia in paralysis.

Various are the modes of administering medicines. 1. Inhalation. This was the most ancient mode, and it is still recommended by Bennet, Sir Alexander Crighton, and others. Autenrith, Meyer, and Magendie, have given medicine through the medium of the lungs and trachea. 2. Insertion into the vagina was an old practice. 3. Administration through the medium of the skin was also an old practice, and has lately been recommended by Jadie and Gallé. Frictions and inunction began with Bellingeri. 4. Enemata were used by the Egyptians. They are said to have learned the practice from the ibis, which gave itself a clyster with its bill 5. Medicines by the mouth were also employed by the Egyptians. Purgatives are said to have been suggested by the apes of Abyssinia. 6. Rubbing medicines into the gums was introduced by Chrelien. 7. Injection into the veins was begun with transfusion by Lower, and has been lately followed by Blundell and Locock. John Hunter introduced medicines into the veins. 8. Maclure inserted medicines, such as corrosive sublimate, into wounds. 9. Blistering was introduced by Lassure and Demartigne. 10. Poison was formerly introduced sometimes through the ears. Hamlet will occur to every one. 11. Some medicines are given by the eyes, in the form of collyria.

In whatever way medicines are introduced they act on particular organs, probably by sympathy, for it is not necessary that they should be absorbed. The particular action of mercury on the salivary glands, was at one time thought to be owing to the weight of its particles, in consequence of which they had a tendency, when sent out by the heart, to proceed in a straight line, and thus encountered the salivary glands. Others thought the mercury attenuated the blood, which was then strained through the glands. Cullen said it united with the ammoniacal salts of the saliva. Murray attributed to it a power of self-determination; for he argued that if it were to go to the kidneys, it would form an insoluble phosphate of mercury, therefore it chooses to go to the salivary glands, where a soluble muriate of mercury is formed. Sponge was given in bronchocele; and it was thought that the soda in it, united with the fat of the tumour, made a soap, which was expelled. Every medicine is adapted to the specific irritibility of certain organs, and leaves others unaffected; just as a flame introduced into a collection of gases, leaves the incombustible ones untouched,

Homœopathia is founded on the maxim, "similia similibus medentur;" which is contrary to the maxim of Hippocrates, "contraria contrariis medentur." Hahneman says no medicine can cure a disease which it cannot produce in a healthy person. Mercury will produce all the diseases it cures;—ptyalism and iritis. For instance, a burn may be cured by holding it to the fire, or by the application of turpentine, and other stimulating fluids. A frozen part is restored by the applica-

tion of snow. Tartar emetic produces and cures inflammation; aloes causes and cures piles; and nervous apoplexy may be both caused and cured by galvanism. Delirium tremens (or cum tremore) is treated with stimuli, although it is the consequence of too much having been taken; and Hahneman produced intermittents with bark.

Medicines cause disease by producing violent constriction, which is followed by relaxation; and in this the disease consists. This is seen in the action produced on the urethra by cantharides, which are adapted to the specific irratibility of that organ. In order to effect a cure, we must make the relaxed vessels contract again; and nothing is so fitted to produce this, as the medicine which has already shown its power in constricting them. Hence, in using mercury or cantharides for instance, if too much be given, too much constriction is produced, and the disease is made worse.

We shall divide medicines into five classes, noticing the particulars in which they agree, and in which they differ from each other, together with the mode of action of each. 1. Evacuants. 2. Astringents. 3. Stimulants and Tonics. 4. Sedatives, antispasmodics, and narcotics. 5. Antacids and anthelmintics. We shall conclude with some observations on the form and preparation of medicines, and the advantages of combining them together.

1. *Evacuant Medicines.*—The mode of action of these medicines is by constricting the vessels, which then collapse and become full of blood, to relieve which congestion, increased secretion takes place. Larger doses of evacuant medicines are required in apoplexy, epilepsy, and tetanus; because in those affections the intestines are deprived of the stimulus which the brain ought to furnish. Mayo showed that pressure on the brain diminished the evacuations of the body; and Magendie proved that the fulness of the veins had the same effect; while, on the other hand, the evacuations are promoted by venesection. This is seen in the administration of purgatives, diuretics, &c. When the veins are full, the absorption of the medicines is not easy, and being overloaded with their natural stimulus, they are but little sensible to other stimuli.

The object of evacuant medicines is to promote the various secretions of the body, and thus relieve congested organs. They are subdivided into various kinds, according as they are adapted to the specific irritability of different organs. 1. Errhines. 2. Sialagogues. 3. Demulcents. 4. Expectorants. 5. Emetics. 6. Purgatives. 7. Carminatives. 8. Diuretics. 9. Emmenagogues. 10. Diaphoretics. 11. Epispastics. We shall have something to say on the peculiarities of each, and the objects with which they are administered; which will lead us to an examination of the remedies usually considered revulsive.

LECTURES ON SURGERY.

By John Hunter, F.R.S.

Of the Heat of Animals.

External heat and cold produce diseases peculiar to themselves. Men are the only animals that go to climates not congenial to themselves, and consequently they are alone subject to the consequences of an unfit climate. Too much heat produces diseases of the liver, though, as Dr. Blane observes, this must depend on some other cause than mere heat, as these complaints are not so frequent in the West Indies as in the East. Diseases of the bowels and tetanus are also often produced by heat; it also tends to produce fevers. The diseases produced by cold, are chiefly those of debility, as chilblains, scurvies: also diseases of the lungs, which are more dangerous than those of the liver. Cold also increases some diseases, as the lues venerea; and changes from heat to cold produce some diseases, as scrofula.

As heat is able to volatilize almost all bodies, the impurities of the atmosphere must very much depend on it; but, as Dr. Blane remarks, the same heat which volatilizes bodies will very often decompose them. The plague has not been known between the tropics, nor the jail fever, and very warm climates abound much less with diseases of a putrid kind than temperate climates. How does the atmosphere affect the body? Is it by the lungs or by the skin? This question it is perhaps impossible to solve. The purest air seems, *cæteris paribus*, to be the coldest; and the worst, the warmest, especially when moist, where the situation is low, and where animal substances suspended in it are allowed to putrefy. In a very hot air substances may be volatilized so rapidly that decomposition can-

not take place; this air will prove destructive by different modes:—1st. By preventing respiration; for if many substances are volatilized, the air containing them will not reach the lungs, except in too small quantities for the support of animal life. 2ndly. By specific poison, producing a variety of diseases, often sedative, as debility and agues, in marshy grounds: in other places, fluxes and different kinds of poisons. 3rdly. The effects of an impure atmosphere are found in jail distempers and hospital diseases; very few of the former places are ever free from foul air, and most hospitals are more or less affected with it. There are different modes in which these poisons may affect. A stranger in a marshy country is much sooner affected than a native or an inhabitant. A person who has not long been used to a jail will earlier, and with more certainty, be affected will jail distemper. An instance of this occurred at Salt Hill, in 1760. The effects at first were attributed to the wine; but they were evidently caused by a few paupers, who were examined by some gentlemen, although the paupers did not appear to be affected. In 1775 some prisoners were examined at the Old Bailey, who infected the whole court, and many died; the judge on the bench, the jury, and evidences, &c. Many poisons are of this kind; a person may carry the infection about with him without being affected himself. The air is capable of carrying most poisons, and communicating their irritations. The venereal poison cannot be thus raised in a state of vapour, or if it can, it loses its effects in the change.

Perhaps next to never coming within the influence of such effluvia at all, it is safest to live surrounded by them in large cities, where, either from the habit of being exposed to their action, or from one effluvium destroying another, the effects are prevented from taking place to the extent that might be expected. However, if the atmosphere, being impure, produced an effect only on those coming into it, all the old residents would be equally healthy as the strangers who come to reside for a time only; yet this is not the case, for they are by no means all robust; therefore what may be styled its unfitness produces a debility, and the persons are neither so strong nor so healthy as those resident in a healthy atmosphere, though they feel not the sudden effects with which strangers are attacked.

We have a kind of atmosphere which spreads over various countries or climates in particular seasons only, as lately over England. These have had different names at different times; we call it the influenza: it affects at first dogs, then horses. In 1775 the dogs were all ill, and afterwards the horses, before men felt the influence of it.

The atmosphere is the menstruum for various substances, some of which are held in a state of solution, and others in a state of mixture only. Water is held in solution in the atmosphere, and when much of this is suspended, it renders it heavier, as the barometer shows; and when a decomposition of the solution takes place, the water is precipitated as rain or snow, and the air is made lighter, as the barometer also shows. This decomposition may take place, although neither snow nor rain is produced, and this in consequence of a fresh combination taking place before the ultimate end is produced. When the above decompositions take place, the birds and beasts seek their shelter; and an effect is produced on wounds, particularly when in a healing state, and in diseases and ailing parts of the human body, so that persons become, as it were a weather-glass. We have lately been informed by a German, that the variations of the magnetic needle have appeared so much to vary with the changes of weather, that as much might be learned from it respecting the prognostics of the weather as from the barometer itself. Winds may be easily supposed to bring with them the effluvia of disease. Extraordinary effects are produced by the Harmattan wind, a wind which blows off the interior part of Africa to the coast of Guinea. It generally comes three or four times a year, at certain seasons; it is always attended with a fog, which has no taste, nor could anything be discovered in it by means of glasses thinly covered with molasses. The fog is thickest on the beach, and gets tolerably thin about four miles inland. It lasts often for a fortnight, and produces a pain and dryness in the mouth and nostrils, not as if from mere dryness, but as if from some acridity. If it continues three or four days, the scarf skin falls off, and the tongue applied to that part of the skin denuded of cuticle is sensible of an acrid taste. Though very prejudicial to vegetable life, it is salutary to animals, curing fluxes and other epidemic disorders, and often restoring weakened constitutions. Fevers which had been imprudently reduced by bleeding, got well in spite of the doctor. The small-pox always yields to it, while it

prevented the inoculation from taking effect in some African slaves. Such as were inoculated before the Harmattan set in had the small-pox, and all did well; but such as were not then seized with the symptoms, and these were sixty in number, never felt any other affection but a slight fever and nausea during the continuance of the wind; after which it showed itself in twenty of them: the others were inoculated, and all did well.

GENERAL PRINCIPLES OF DISEASE.

Now that I have treated some of the properties of the animal in health, I shall go on to treat of its imperfections, or diseases. To understand these it was necessary, in the first place, to describe its perfect or healthy state. To describe the parts in a healthy state belongs to the anatomist; their actions in this state to the physiologist; but the diseased state of these actions, and the restoration of parts to health, to the physician and surgeon.

It is hardly to be supposed that disease is ever natural to an animal; it can only be the consequence of some unnatural impression which interferes with the natural action of the body, which impression may take place at the very first formation, or original arrangement of the animal, so as to stamp a permanent unnatural action; or it may take place in the first life, namely, in utero; but much more frequently after birth, when it is exposed to a thousand variations, all of which are impressions, and are contrary to the natural actions of the animal, or are, as it were, a forcing it to take on actions, which are either to remove those impressions or to destroy itself.

It is most probable that diseased actions are established on nearly the same principles that the actions of health are. They are at least similar in a great many of their principles: they destroy the dispositions of parts; they produce growth; they produce the power of removing natural parts; they are ruled by habit; they are affected by every external influence.

An animal is so constructed as only to continue some diseases so long as the immediate cause lasts, as in scrofula, when it arises from climate; or which is so constructed as to continue other diseases from habit, as gleet, so as to go on with a disease, although the first cause is gone; and this may be only for a time, as in gonorrhœa; or it may be for ever, as in lues, cancer, &c.

Diseases are either common to all parts alike, as inflammations of all kinds; as, also, tumefaction, scirrhus, dropsies, &c. The peculiar are those in which there is a fault in the peculiar actions of a part, as involuntary action of voluntary muscles, too much or too little secretion from any of the glands, in short, wrong actions of any part in its peculiar mode of action.

After the disposition, the action which should destroy the disposition takes place; the action having taken place, the disposition ceases and the natural action of the parts returns. But this is not always the case. The disposition may be affected in one of the following ways: 1st. The action may destroy the disposition, for instance, in gonorrhœa, (and perhaps in many other complaints); in this case the action destroys the disposition, or the inflammation destroys the disposition of the virus. 2dly, The disposition is destroyed for a time, and returned at intervals, or after certain spaces. as in all periodical diseases, or others where the disease ceases for a time, and the disposition continues. 3dly, Where the action takes place, yet does not destroy the disposition, as the venereal disease, which goes on till it is cured or kills, and the action of it never destroys the disposition.

Many diseases often require their full action before they produce their effects, as the gout and many agues. Vomiting is the action following the disposition to sickness, and is often its cure, for without it the nausea and disposition will continue. Sometimes chronic diseases will be cured by acute ones, in which case, the full action being given, the disposition is removed.

General Observations on Susceptibility and Disposition, constituting Constitutions, and on Actions forming Symptoms.—The physiology of disease is more extensive, more obscure, depends less on general laws of nature (being often a prevention or perversion of those laws), and is therefore more irregular than any part of science, and is of course less understood.

The most simple idea I can form of an animal being capable of disease is, that every animal is indued with a power of action and a susceptibility of impression, which impression forms a disposition, which disposition may produce action, which action becomes the immediate sign of the disease; all of which will be according to the nature of the impression and of the part impressed.

That every action, whether natural, preternatural, or diseased, arises from this

susceptibility of impression, I think we must allow, which susceptibility may exist without even disposition or action, if no impression or stimulus is made; for the disposition is only formed in consequence of some impression, and the action is only the consequence of the disposition being so strong as to incline a part for action rather than for resolution. Therefore action is the ultimate consequence of impression being made on a part endued with a susceptibility of impression and the power of action, which impression gives them the disposition to act. For from what was said above, parts having susceptibility do not necessarily have the disposition; the disposition arises from some impression, which will, in its turn, produce the action, and this action, or disposition to action, must be sufficient to overcome the natural and habitual actions of the part or whole, just as force overcomes the vis inertiæ of matter. But susceptibilities are in some so strong as almost to approach a propensity to act, which is probably as strong as the disposition, or often probably stronger.

The actions of the body, and the cause of these actions, with their effects, are exactly similar to those of the mind, and as we are sensible of the actions of the mind themselves, abstracted from their causes or effects, we reason about them as much as we can reason about their causes and effects. This is not the case with the actions of the body, for in them we are only acquainted with the causes and effects, not the action itself; therefore our minds are only reasoning about them from analogy.

The susceptibility for action of the mind is not known to the mind itself, but by the consequence of such susceptibility. Some minds are much more susceptible of certain actions than others; thus, some men are more susceptible of anger, others of love. But this does not imply that one mind is always in anger, another in love, &c.

With this susceptibility of mind, a stimulus must be applied to produce the disposition to action. A stimulus of one kind will produce anger, of another kind, love. The action of the mind employs other parts to complete the whole, as when the actions of the mind are employing other parts to produce the ultimate effects. But these are not necessary to the action of anger, for anger could exist without the action of employing other parts, and indeed continue longer; for this tends to destroy the action of anger, because the effect being produced the cause ceases.

Every animal has a variety of susceptibilities which admit of a variety of impressions, each impression producing a disposition peculiar to itself. Also every animal has some of those susceptibilities stronger than it has others, out of all which a vast variety of diseases is produced. Each tendency to a peculiar mode of action gives the character of the animal respecting disease. The sting of a bee, for instance, affecting some people much more than others, demonstrates that there is a susceptibility in some for such actions more than in others. In many the susceptibility will be so strong as only to require a stop to be put to the natural actions, when the disposition and the disease too will take possession of the part or of the whole. An instance of this we have in scrofula, for it often happens that common accidents, as strains, bruises, fevers of all kinds, produce the disease even in situations the most calculated to prevent it, as in the West Indies. Even poisonous dispositions are produced in this way, a blow on the breast or testicle shall produce a poisonous mode of action, e. g. cancer.

From this account no animal is formed with a disposition for the action of disease. The natural actions are for the good of the animal; but they can be perverted, they can be made to destroy the whole. These circumstances are similar to those of the mind; some minds are more susceptible of some impressions than they are of others, which produces a disposition to act, which action will be according to the impression. The susceptibility of the constitution may be increased, so as almost to be similar to a new formation, but is never originally formed, by art. Where the susceptibility is weak, it may be increased and kept so much on the brink of forming the disposition, that it shall only require the least increase, or some other immediate cause, to produce the effect or form the disposition, as a man not naturally fearful may be worked upon so that the least thing may alarm him. Susceptibilities may be so increased as almost to deserve the name of acquired; constitutions long habituated to particular climates will form a scrofulous habit, or an aguish habit, and a certain way of life will produce a rheumatic or gouty habit. On the other hand, persons naturally susceptible may be made by degrees considerably less so, by being gradually accustomed to the

immediate cause, beginning within the degree of impression necessary to excite disposition to action.

There is no such thing, strictly speaking, as a predisposing cause. What is commonly understood by a predisposing cause is an increased susceptibility to form disposition to action. When I say I am predisposed for such and such actions, it is only that I am very susceptible of such and such impressions, which impressions must form the disposition; or if it is intended to dispose a person for such and such actions, it is only to render him more and more susceptible of such and such impressions. The susceptibility must always precede the disposition. A disposition is a determined thing,—a thing formed,—a kind of resolution.

Of Susceptibilities of Parts and Constitutions for different Actions.—Every constitution is more susceptible of some constitutional actions, both natural and diseased, than it is of other actions, whether natural or diseased; and every constitution is more susceptible of some local actions, natural and diseased, than it is of others.

Every constitution is compounded of parts whose natural actions are very different from one another. Thus, the natural actions of the liver are very different from those of the lungs. Therefore we also find the diseased actions of one are often different from those of the other; although every part of the body may be subject to some one or more common diseased actions, as e. g. the liver and lungs, which may be subject to common inflammation, or they may both have the specific disease, as scrofula.

Every constitution being composed of different parts, whose natural and diseased actions are different from one another, as above mentioned, these actions being according to the nature of each part, and each part in some constitutions being more susceptible of natural actions peculiar to itself than the same part in other constitutions, so also in some constitutions each part is more susceptible of its diseased actions than the same part is in other constitutions. Thus, as the liver in some constitutions is more susceptible of secreting bile, which is its natural action, than it is in others, so also it is more susceptible of its peculiar diseases in in some constitutions than it is in others. Constitutions may be said to be more or less susceptible of this or that universal action, among the first of which may be marked the irritable and the indolent.

Secondly, some constitutions are more susceptible of some diseases than others are of other diseases.

Thirdly, some constitutions are more susceptible of some diseases than others are. And those constitutions not susceptible of this or that disease may be at the same time more susceptible of some other diseases than the first-mentioned constitutions are. For example, some constitutions are more susceptible of inflammatory fevers than of any other fevers; others are more susceptible of putrid fevers; while either one or the other of these constitutions might have some other disease, either violently or mildly, as small-pox, measles, &c.

Constitutions may be more susceptible of some one specific disease than the same constitution of other specific diseases, e. g., some constitutions are more susceptible of small-pox than of measles, or *vice versa.*

Some constitutions may be more susceptible of some specific disease than other constitutions are, e. g., some constitutions are more susceptible of the small-pox than others are, and yet have the disease mildly.

All of which characterize the constitution at large.

Of universal Susceptibility to produce local Diseases.—Bodies may be said to be both constitutionally and locally susceptible of diseased action. The erysipelatous fever, which is constitutional, being attended by the erysipelatous inflammation, which is local, is a strong instance of this.

Constitutions are more or less susceptible, both universally and locally, of the same disease, as the small-pox fever, when violent, has more violent and extensive local effects; when mild, more mild local effects.

Constitutions may be said to be more or less universally susceptible of this or that local action, when one part takes on action without any visible immediate cause, or when any injury (whether constitutional, as fever, or local, as accident,) makes parts so injured run into a much worse diseased state than the same injury would have done in others; many parts even taking on specific diseases, whenever the immediate cause is produced, as scrofula, venereal gonorrhœa, &c.

Constitutional susceptibilities for diseased actions may be divided into three kinds, and there are also others which are mixed.

1st, *An original constitutional;* that

is, where there is a universal susceptibility for diseased action of one kind or another, in which, however, the whole must be in action, as inflammation, fever, small-pox, &c.; also sympathetic fevers of all kinds. Persons may be very susceptible of the whole of these, or only of one or more.

2nd, *Original local;* that is, where the whole is so constructed as to be universally susceptible of going into diseased action in any one part; but the actions will be always local and independent of every other part, as scrofula, gonorrhœa, or chancre. Hence the venereal disease is worse in one than another, and yet is local; the same with scrofula.

3rd, A susceptibility to fall into universal indisposition, as if there were something teazing the whole; which can then call on a part, and that relieves the whole, as in gout, rheumatism, and perhaps all those diseases where the local action is critical. Most of these can be relieved by a universal facility to action, or retarded by the contrary, which affect either the local action or the constitutional one.

OBSERVATIONS ON EPILEPSY,

MADE AT THE HOSPITAL DE BICETRE, IN THE YEAR 1829.

By W. Murdoch, M.D.,
Formerly Interne in the French Hospitals.

There are certain diseases of which the study is neglected by professional men, either because they are considered incurable, or on account of their rare occurrence, both in private practice and in the establishments destined for the reception of human sufferers. Epilepsy is one of these afflictions; and if we run over the nosological table we shall not find another so degrading to our species, so dreadful in its symptoms, and so appalling in its consequences. There is something indeed frightful when an individual, apparently in all the vigour of health, suddenly falls to the earth, his whole muscular system is violently convulsed, his mental faculties suspended, his face livid and distorted, his respiration laborious, and his life endangered. This state continues a few minutes, more or less, according to circumstances, and he then gradually comes again to himself, and after a long stupor, returns to his usual intellectual and bodily habit. Such is an epileptic fit, and a succession of these fits, occurring at regular or irregular periods, constitute the disease called epilepsy, from επιλάμβανω, to seize upon. No wonder that in times of ignorance persons tormented with this malady were looked upon as possessed with an evil spirit, that the names of *morbus herculeus*, *sacer demoniacus*, were given to it, and that the superstitious Romans used to suspend the deliberations of the forum when any one present was seized with epilepsy, hence the appellation *morbus comitialis*. The French authors have distinguished two forms of epilepsy, to the first of which the symptoms have been just enumerated, they have given the name of *grand mal grandes attaques*. It is decidedly the most common. The other has been called *epileptiform vertigo petit mal, petites attaques*. It consists in a sudden suspense on perturbation of the intelligence, with relaxation of the muscles. The patient is not convulsed, often does not fall, but recovers himself in a few seconds. Some are not inclined to admit this division of epilepsy into two species, because the second variety almost always accompanies the first, the patient having alternately each sort of attack, and because when it does exist alone, it invariably degenerates into true epilepsy. In most cases the invasion of a fit of epilepsy takes place without any preliminary warning to the sufferer. Sometimes, however, although the patient is not conscious of the impending evil, it is evident to all those who are present, from his change of manner, from the movement of his eyes and features, and his extreme irascibility. Certain individuals feel the appearance of the epileptic convulsions, the head aches, they see flying sparks, experience hallucinations, or a peculiar sensation starting constantly from one part of the body, and seeming to rush towards the head, where it appears to confuse the ideas and produce the fit. This sensation has been denominated the *aura epileptica*. It is occasionally observed in recent epilepsy, but is by no means a common symptom. Cases are on record in which the fit has been prevented by intersecting the progress of the aura, or by cauterizing or destroying the part from which it proceeded. As the epileptic fits progress, or in other words, when the epilepsy confirms itself, the sensation of the aura gradually wears off, and finally disappears.

At Bicêtre, where most of the cases are

of old standing, I could not find, among above one hundred epileptic, any one who experienced the true aura. Potin Michel, aged 29, complained just before the attack, of a globe rising from the hypogastrium, and arriving rapidly to the larynx through the abdominal and pectoral cavities. At the larynx it stopped, and seemed to suffocate him. He always retained a certain degree of consciousness during the fit. He could hear and see confusedly, but his agony hindered him from answering any questions. Another patient felt also the sensation of a globe or ball, but it was fixed at the epigastrium, and seemed progressively to expand, creating intense anxiety and excruciating torture. The disease in these two men approached to hysteria, and their aura to the globus hystericus. Potin had in his whole appearance something feminine, he was of delicate feature, with soft voice, large breasts, and beardless chin. A few weeks ago I had an opportunity of observing the aura epileptica, in a young man of nervous temperament, aged 22, who, after some bacchanalian and venereal excesses, was seized with fits of epilepsy. One evening, while seated in my surgery, he felt, to use his own expression, the fit creeping gradually upon him, from the fingers of his left upper extremity. When I examined him, the muscles of the forearm, particularly the flexors, were already seized with tetanic rigor. I immediately straightened the fingers, and made him rise from his seat and walk rapidly about the room, striking forcibly the palm of the afflicted hand, the starting point of the aura. By this means the fit was prevented, and has never returned. He had previously been bled and purged; and has since totally renounced his habits of intemperance.

Whatever symptoms precede the arrival of a paroxysm of epilepsy, the phenomena of the fit itself is identical. The patient utters a cry and falls, the body is seized with a tetanic rigor that lasts one or two seconds, and degenerates into convulsions, with alternate contraction and relaxation of the muscles. The actions of the extensors seems however to predominate. Occasionally one limb alone is convulsed, sometimes one side of the body; in a word, there may be as many different movements as there are different combinations of muscular action; but in most cases the whole muscular system is violently and irregularly agitated. During the attack the tongue protrudes from the mouth, and is often bitten and lacerated from the trismus of the muscles of the jaw; hence the sanguineous froth that issues through the lips, and covers the patient. From the moment of invasion the intellectual faculties are entirely abolished, the patient is insensible to the most powerful stimuli. The action of the heart is considerably increased, the head is thrown back, the face from the embarrassment of the respiratory muscles is turgid and violet, the blood not unfrequently exsuding through the integuments of the head. The fæces, urine, and sperm may be involuntarily ejected. The attack ends by a long and painful inspiration, in which the sufferer contracts all the muscles that dilate the thorax. These dreadful symptoms are succeeded by a stupid repose. The epileptic is heavy and unintelligible for hours. His features are discomposed, small petechial spots cover his neck and face; they are the result of the rupture of the capillary vessels during the irruption of the blood to the head. This stupor is progressively dissipated, or terminates by a deep lethargic sleep, the duration of which depends on the greater or less fatigue that the system has undergone. The epileptic often complain after their attacks of aching in the limbs, similar to that experienced by persons unaccustomed to muscular exertion who have exerted themselves more than usual. This symptom may remain two or three days, and generally yields to gentle frictions with camphorated liniment. An epileptic fit lasts four or five minutes, and increases in length as the sufferer waxes in years. I have known an attack continue an hour, in defiance of all the remedies that were prodigally employed. In some persons the paroxysms come on, at stated periods, every day, or every other day; but in nine cases out of ten their arrival is very irregular, and seems connected with the state of the atmosphere. The epileptic Gaillard, written in 1829, at the Hospice de Bicêtre will remain a month or six weeks without a convulsion; but to my knowledge he has had seventy successive, but distinct, attacks in four-and-twenty hours. During the interval of these series he enjoys the plentitude of health. His intellect is moderately developed, and the disease appears not yet to have preyed upon it. The frequency of epileptic fallings varies much in different subjects. Adam (written in 1829), at Bicêtre, has several paroxysms daily, and never passes a day without one or two attacks.

Every cause of nervous excitement

may produce a convulsive fall in an individual afflicted with epilepsy. Intemperance, unusual exertion, moral emotions, &c., are proximate causes, and according to the statements of all the epileptic patients I have interrogated, and who would answer the question, coition is followed immediately by an attack, and in many, the first fit had been an interruption of venereal pleasure. At the Hospice of Bicêtre, in which the epileptic are assembled in great numbers, masturbation is a very common vice among them. Night is less favourable than day to the epileptic, more paroxysms of the disease occur from midnight to two in the morning than at any other hour. It has been affirmed that epilepsy is more frequently met with in hot than in cold climates; I will not pretend to decide this point, but certain it is, that at Bicêtre more falls occur in summer than in winter. More maniacs also are brought into the public establishments in France in July and August, than in any other time of the year. A sudden variation of temperature, or change in the weather, is constantly accompanied by an increase in the number of epileptic attacks. Never are they so frequent and intense as during a hot stormy night. The nervous system is influenced by the electricity of the heavens, and in the epileptic subject it is more developed, more active, than in another. He is a living barometer. Habit has also a great influence on the repetition of the symptoms, and this is a consideration that should never be lost sight of in the treatment of the malady. During the intervals of the attacks, intervals that are of long duration while the disease is of recent date, the epileptic are often melancholy and deeply affected with the incertitude of their miserable fate. Like all persons of nervous temperament they have acute feelings, and are generally ready to submit themselves to any treatment in the hope of a cure. The depressed spirits of the epileptic does not produce any *penchant* to suicide.

Some individuals never experience but one stroke of epilepsy, which disappears without leaving any functional or organic lesion of the brain. It happens, however, sometimes, that after a single fit the intellect remains weak, and only acquires, by degrees, its original vigour. Memory is always the faculty that is most impaired by this affection. Authors relate that one fit of epilepsy, originating from a sudden and violent terror, has been known to destroy completely all the powers of the mind, and to reduce to the condition of a drivelling idiot, a man who, but a few moments before enjoyed the range of an extensive capacity. Death itself may be occasioned by the first paroxysm in a subject extremely irritable, and when the proximate cause is excessively violent. But it is rare that the disease terminates thus rapidly; the first convulsions are followed by an interval more or less protracted, during which the patient recovers apparent health, to be soon affected with fresh attacks, augmenting in frequency and intensity as he advances in life. The history of most cases of epilepsy is the following,—the powers of the intelligence are gradually worn out, the interval between the fits becoming shorter and shorter, till it happens that the obscurity of mind consequent upon one attack, is not dissipated at the arrival of another, and the victim falls into permanent idiotcy.

Atrophy of the body accompanies that of the mind, a limb, or part of a limb, becomes paralysed; yet, notwithstanding this state of marasmus, the muscles are from time to time dreadfully agitated. Patients will live for years, insensible of their condition, and reckless of every pleasure except that of food, which they continue to the last to devour with voracious appetite. The tragic scene terminates by some organic disease, of the more important viscera, and, strange to relate, an epileptic idiot, in the last moments of his existence, will often show glimmerings of a reason that had been abolished for years. At Bicêtre the epileptic succumb, in summer, to diseases of the intestinal canal, and in winter, pneumonia and the scurvy make great ravages among them.

Dloville affirms that epileptiform vertigo has a more speedy effect on the mind than the true epileptic fit. I have remarked that men of robust constitution *do not* resist the workings of the disease longer and better than those of more meagre and weakly habit. Certain epileptic subjects experience but little inconvenience from their attacks, they are universally persons whose paroxysms come on at very distant periods. The accidental epilepsy of children, eclampsia of the ancients, disappears often after the cutting of the first teeth, and scarcely ever resists the genial influence of puberty. Not so hereditary epilepsy, which always waxes in strength as the patient grows older, and accompanies him to the grave. In women there is an exacerbation of the disease at the period of every mentrual dis-

charge. This remark was made by an observer at the Salpetrière, which is an asylum for females similar to Bicêtre for males. Menstruation irritates the nervous system, and makes it more impressionable. Pregnancy suspends epilepsy; the action set up in the womb, the influx of vital fluid to that part prevents the head from being congested. It is perhaps for this reason that the invasion of an acute disease suspends epileptic fits. The acute phlegmasiæ of the thorax seemed to have more constantly this effect than those of the abdomen. The fits generally (not always) return when the intercurrent disease is cured. It is said that when an intermittant fever seizes an epileptic patient, and is cured by nature or by art, the epilepsy never reappears.

Credat Judæus Apella
Non ego.

On this principle, however, certain practitioners have tried to regulate, by various means, the arrival of paroxysms, and to render them periodical, hoping that a dose of quinine would be an effectual remedy. I am sorry to say that no case is on record in which these efforts succeeded.

If we reflect one moment on the symptoms of epilepsy, we shall not hesitate to declare, that the brain is the seat of the disease; during the paroxysm paralysis of the organs of general and specific sensibility, and cessation of the intellect, while the other function of the encephalon, that of supplying the muscles with nervous power, is enormously superexcited. It is, then, to the nervous centre that we must principally direct our attention in the post mortem examination of the epileptic. The convulsions of children are often confounded with epilepsy; a convulsive fit may be sympathetic, but twice continued epilepsy scarcely ever.

In recent epilepsy, when death has been caused by another malady, it is often impossible, with the most minute inspection, to detect any pathological lesion of the organ of innervation. Many of the encephala examined at Bicêtre, might have been given as models of the sound state. The only palpable alteration I have now and then met with, in the few autopsies of recent epilepsy that came under my observation, was a considerable firmness of the white pulp of the brain. The head of the epileptic is perhaps smaller than in other subjects. In chronic epilepsy almost every lesion of the nervous centre has been observed, tubercles, spiculæ of bone, fungi, &c. I pass over these because rarely met with, to notice a pathological modification which, although not constant, has often been found at Bicêtre and at la Salpetrière; I mean the induration of the posterior lobes of the brain. This hardening generally occupies the pes hippocampi and the inferior corner of the lateral venticle. In two post mortem inspections of chronic epilepsy, made by myself, this lesion was very marked, and in the patient Noël, aged 22, epileptic from his infancy, and who died of acute pleuritis, the posterior lobes of the brain, and the pedes hippocampi, were of the consistency of cartilage. From such facts as these, some authors have concluded that epilepsy is an inflammation (chronic of course) of the brain. The perseverance that these gentlemen have displayed in their pathological researches is admirable, certainly, but they have not explained the most important thing in the disease, i.e., the intermittance of the fits. I have, once or twice, found the arachnoid membrane in epilepsy, dotted with small white spots or cartilaginous structure. Let us add, that when the epileptic die during a paroxysm, a considerable degree of cerebral congestion is found. The presence of blood in the encephalon does not explain any of the essential phenomena of epilepsy. The congestion is produced by the morbid action of which the brain is the seat; it is kept up and augmented by the energetic and accellerated contractions of the heart, and by the absence of proper movements of expiration and inspiration, so necessary for the return of venous blood to the centre of circulation.

Epilepsy is a disease often simulated—it may be complicated with almost every other affection, and is frequently concomitant with mania. Epileptic mania is characterised by a furious delirium, with tendency to mischief, destruction, and bloodshed. Epilepsy is undoubtedly an hereditary malady, and may often be traced, lineally, through four or five generations. Like mania, scrofula, and phthisis it is more common among the Jews, and those religious sects whose creed forbids them to intermarry with persons of another persuasion. Under such circumstances, the sphere of connection being limited, vices are more easily propagated by descent. I have interrogated the relations of several epileptic patients, and can assert, without hesitation, that I scarcely ever found true epilepsy in a subject, whose parents or forefathers had not been afflicted with some disease of the nervous

system. When epilepsy is not hereditary it requires a long series of accidental causes to produce the first paroxysm. Moral emotions, excessive anger, joy, or grief are proximate causes of epilepsy, but fright is the most powerful. No impression perturbates so profoundly as terror the functions of the nervous system; and in nearly all of the persons by me interrogated, the first attack was solely ascribed to fright. Causes purely physical may give birth to epilepsy; authors say that it may follow a blow, a fall, or a concussion of the brain.

True epilepsy has sometimes originated in a simulation of the disease, and it is certainly dangerous for irritable persons to view often the fall and convulsions of an epileptic. An Interne at Bicêtre, frequently in the discharge of his office, called to render medical assistance to the epileptic, after three months' sojourn in the hospital, began to experience spasmodic contractions of the muscles of the throat, and other disagreeable sensations. He prudently withdrew from the asylum. It is a custom in France, to mix, indiscriminately in the same ward, the insane and the epileptic. This is essentially pernicious to both. At Bicêtre the epileptic inhabit the same *salles* as the convalescent maniacs—another absurdity. The tender nervous system of a convalescent madman may be singularly shaken by the continual sight of epileptic fits, and I could bring forward one or two cases of epilepsy, developed during the stay of individuals in these, I may say, infected wards.

More women than men are epileptic, and this may be explained by the greater irritability of the nervous system in the female. The epileptic are often of strong constitution, in them the forehead is depressed and covered with hair, the eyes large, the physiognomy dull, the neck short and slightly curved forwards. In those that are young, and who enjoy good health in the intermittance of the disease, the muscular system is well organized, and they are capable of performing very hard labour. This predominance of the muscles has not escaped the notice of Dr. Ferrus. As every muscle acquires strength by exercise, he attributes the anomalous power of the system in the epileptic, to the frequent and powerful contraction of the fleshy fibre during the paroxysms of the disease. Atrophy of the muscles takes place in after life, when the brain has become deeply diseased and the nutrition of the whole body suffers from want of the animating influence of the centre of innervation.

The epileptic are volatile and inconstant, addicted to the pleasures of the table, and to every species of sensuality; although these enjoyments evidently tend to aggravate the disorder. They are in character petulant and boisterous; their anger is a blind fury, knowing no bounds, and in their quarrels I have repeatedly known them strike persons with whom, but a few moments before, they were living in amity. They are differently governed, and most ungrateful for services rendered. The sphere of their intellect being very limited, they possess little memory, and consequently no capacity for study; yet some epileptic subjects are not without *wit (esprit de saillie)*, and have the repartee and exact and caustic.

Epilepsy is considered incurable by the greater part of the profession. Imbued with this idea, they either do not treat the disease, or employ, empirically a few remedies that scarcely ever fulfil any positive iudication. Perhaps it would always be possible to ameliorate the condition of the epileptic, if practitioners gave more attention to the malady, and followed up, with perseverance, a rational and physiological treatment. They should never forget that epilepsy is a disease of the brain, and that all its symptoms are merely accessory to this primary lesion.

I have seen treated by others, and have treated myself, many epileptic subjects, and I may venture to affirm, that the antiphlogistic regimen and treatment, employed with moderation, are the best, and the remedies vaunted as powerful antispasmodics, have little effect whatever in arresting the progress of the malady. General bleeding is the first and most powerful antiphlogistic. It may always be employed with advantage in young and vigorous patients, who are conscious of the approach of the paroxysms. Under such circumstances, venesection performed before the fit, invariably diminishes its intensity. The epileptic, when young, are often plethoric, and bear phlebotomy well, but it should be cautiously employed on those whose convulsions are of ancient date, and whose intellectual powers begin to verge towards demency. In such cases it only hastens the arrival of permanent idiotcy, marasm and death. I have sometimes bled patients during the fit, but the convulsions were never diminished from the loss of blood, and often became more intense. The irregular contractions of the muscles

of the upper extremities, render it frequently difficult to stop the hæmorrhage from the aperture of the vein. After the fit, bleeding is rarely to be recommended, except when there remains a state of apoplexy, or evident signs of inflammation of the brain or its membranes. It is better to employ external and internal stimulants to dissipate the torpor consequent upon the paroxysm. To the use of general bleeding before the fit may be added, the application of leeches to the temples, behind the ears, in the environs of the arms, or to the genitals of females, in whom the suppression of the menstrual discharge is an accompaniment of epilepsy. Cupping on the scalp has been strongly recommended, and the warm bath, with cold effusions on the head, has been of the greatest service. A seton may be kept constantly open in the nape of the neck; it is a permanent and powerful revulsive. Mons. Gendrin has advised, in epilepsy, cautious cauterization of the synciput, by means of an ammoniacal ointment. The ulceration produced by the application should be as large as half-a-crown, and kept open for some time. This method of treatment has been very much vaunted in the Parisian Hospitals.

To the above-named treatment we may add, light exercise, change of scene, frugal diet, and a moral treatment, for which rules cannot be laid down, as it will necessarily vary with every physician, and according to the character of the person treated. The antiphlogistic is undoubtedly the most *rational* treatment, but it is the very worst when carried to excess, (a common fault in the French schools,) as the abstraction of too much vital fluid, from persons already under the influence of a debilitating disease, is liable to bring on premature marasmus At Bicêtre were often seen persons who, before their arrival in the establishment, had been the victims of too severe a regimen. They were pale, meagre, and bloodless, and their heads and necks were covered with the scars of leech-bites. Bleeding, when too copious, augments, instead of diminishing, the epileptic convulsions. In epilepsy it is better to bleed often, and draw a moderate quantity of blood each time, leaving a certain interval between the venesections, that the patients may rally sufficiently.

At Bicêtre little faith is placed in antispasmodics, however, musk, lactucarium and valerian deserve a trial, and may be administered to pallid weak subjects, when the antiphlogistic treatment cannot be persevered in. Prussic acid was once tried at Bicêtre, but the result was unfortunate. It might be a useful remedy in cautious hands.

The French practitioners generally are sparing in the use of cathartics, but Monsieur Ferrus often followed the practice so much vaunted by the ancients in cerebral affections, and added brisk purges to the above named treatment.

It is said that the islands of Anticyra furnished the Romans with the hellebore, so much celebrated for the cure of mania and epilepsy; and Pliny, the elder, relates that Drusus was radically cured of the latter disease by the use of the remedy (*comitiali morbo liberatus*). Mons. Ferrus was averse to emetics in diseases of the brain; they always augment, temporarily, the cerebral congestion, and should be cautiously avoided in a disease that almost consists in a sudden impulse of blood to the head. The epilepsy of children, when not hereditary, often disappears under the genial influence of puberty.

It has been said that the nitrate of silver, employed with perseverance, will sometimes effect a radical cure of epilepsy. It is a dangerous remedy and requires to be used with great discrimination, for it may destroy the life of the patient by creating disease of the stomach. The most horrible erosions and ulcerations of this viscus have been found in the bodies of persons to whom this remedy had been long administered. It also changes the colour of the skin to an indestructible olive.

Mercurials and gentle salivation might also be tried with advantage in epilepsy. I do not pretend, in the above pages, to have stated anything new to the profession, but merely to give a correct account of epilepsy, as observed by me at Bicêtre in 1829.

ON THE USE OF IODIDE OF IRON.

By M Ricord.

The advantageous results obtained by iodide of iron, given internally, in cases where tonics should be combined to antivenereal medication, particularly when

scrofula or lymphatism complicate the affection, entitle this medicament to be classed among the most powerful agents in secondary syphilis.

From the cases collected during the last two years, it may be observed that many patients who had gone through the usual treatment without deriving any benefit, and who had even grown worse, have found iodide of iron greatly modify their constitution, and the morbid cause which prevented the disease having its regular course no longer existing, the cure is speedily effected.

But it is not only to modify the constitution, that M. Ricord recommends iodide of iron; the disorganization resulting from syphilis is removed through the influence of this therapeautical agent. A few days after it had been taken, ulcers on the legs, of so bad a nature as scarcely to leave a hope of cure, have rapidly cicatrized.

The same observations have been made for ulcerations of the throat, which mercurial treatment tended to increase; and we shall here notice this deplorable error of some partizans of ancient doctrines, who fancy themselves obliged to attribute to syphilis all ulcers co-existing, or developed during the course of the disease; while it often happens that the lesion is produced and maintained by the use of two powerful medicines, or pretended specifics, unless they be given up.

In patients affected with diseases of the bones of the skull, the face, tibia, &c. strong doses of iodide of iron have induced the separation of the decayed portion in a much shorter time than by the use of the means generally employed. Indeed, the decay has been arrested before the effects of the therapeutical agent have been noticed.

In scrofulous, lymphatic, and weak patients, the chronic discharge of the urethra and vagina have promptly ceased under the influence of this new medication.

Withuot alluding to the particular indications which may result from the state of the subject, and the necessity of sometimes combining the administration of iodide of iron with bitters and antiscorbutics, the dose fixed by M. Ricord is six grains, increased gradually every two days, until the result be favourable, and we have sometimes seen as much as forty grains administered in a day.

We shall now show the new manner of applying iodide of iron, which has proved eminently successful. Administered in injections in cases of blennorrhagy; even when the disease is of long standing, and particularly when there is but little pain in the urethra, it will be found a most desirable remedy.

The following cases, taken from the venereal hospital in Paris, will be the best possible proof of the efficacy of this medication.

—— Ribaprey, aged 21, was admitted into the hospital the 23rd of December, 1836.

Abundant urethral discharge during two months; no pain in voiding the urine.——*Injections of iodide of iron:* he went away cured the 9th of January.

—— Vallier, aged 29, entered the hospital the 6th of January, 1837.

Blennorrhagia, of six months standing; the 7th of January, injections of iodide of iron; the 9th he went away cured.

—— Ricauner, 22 years of age, came to the hospital the 6th of January.

Had been effected with blennorhagia for six weeks, epididymitis during the last four days; injections of iodide of iron the 7th of January; compression of the testicles by Vigo's bandages. Cure the 9th of January.

—— Faneau, aged 21, admitted the 27th December, 1836.

Blennorhagia for a fortnight; great pain in making water, Antiphlogistics, and copaiba unsuccessful till the 13th of January; iodide of iron; cured the 16th of January.

Jean Ville, aged 25, came to the hospital the 6th of January, 1837.

Blennorrhagia, during five months, have resisted every treatment; copious discharge; the 7th of January injections of iodide of iron; cure the 10th of January.

—— Vives, aged 29, entered the 3rd of January, 1837.

Blennorrhagia, of eight months standing; 4th of January, injections of iodide of iron; left the 7th, cured.

Nearly all the cases are the same, and the duration of the treatment is also the same.

It is essential to observe, that iodide of iron is administered in doses of half a drachm in eight ounces of water; in one single case excepted, when two drachms in eight ounces of water were prescribed. M. Ricord employs the first formula, and seldom goes beyond the second; yet there are cases necessitating a drachm of iodide of iron to an ounce of water. However

this may be, the treatment is very active, and requires to be administered with great judgment; for besides the difficulties resulting from therapeutical indications, the intensity of its action appears to vary considerably, according to the quality of iodide, and for certain doses, whether the solution be filtered or not.

In all cases of blennorrhagy, where astringent injections are indicated, iodide of iron appears to hold the first place. In general, its use is only contra-indicated by great inflammation, or pain in voiding the urine. It is, of course, understood, that all symptoms of cystites are in the same condition.

With the exception of these circumstances, easily ascertained, complete success may be looked for, unless there be serious alteration of the canal, which in every case would require peculiar concomitant medication.

M. Ricord has remarked in the numerous patients undergoing this new treatment, that when the blennorrhagy was but slight, if there only existed a little urethral heat, and no pain, which pain would have been a contra-indication; iodide of iron administered in doses of three grains to an ounce of water, has put an end to the disease at the sixth or eighth injection.

In very few cases has it been necessary to increase the dose, which should always be done with the greatest precaution, lest as we have already stated, the results should be dangerous. Indeed it may be asserted that without being used to administer iodide of iron, it would be most injudicious to prescribe large doses.

Thus, for two individuals, apparently in the same morbid condition, the injections of iodide of iron may produce effects completely opposite.

In one case the disease disappears as if by magic; we have given several examples of this kind. In the other case it increases rapidly, and may terminate in retention of urine, inflammation of the neck of the bladder, and of the organ itself.

Nevertheless, it must be remembered, that in certain cases we must not be wholly guided by these symptoms. If the use of this medication be suspended, and after two or three days repose, and suitable treatment, all symptoms disappear, the discharge, which in certain individuals was considerable, and tinged with blood, is soon transformed into a transparent secretion, which ceases without further remedy being necessary.

The above symptoms are uncommon, but would be undoubtedly produced by too great a dose of iodide being given at the commencement of the disease.

The cure is mostly obtained without pain, the patient merely feels a sort of pressure and heat in the canal. Some have pains in the urinary meatus, others suffer when voiding the urine, and by degrees all the inconveniences above-mentioned may take place.

Blennorrhagy having become chronic, whatever may be its source, as we have already observed, when the canal is not deeply altered, has given way to iodide of iron, in four, six, or eight days. In this case, the administration of the medicament is to be less dreaded; the canal is less susceptible of sudden inflammation, particularly if the dose of iodide of iron be administered according to the recipe we have given; it is essential to observe that it would be often useless to attempt by local means the cure of an affection receiving all its influence from idiosyncrasy, which could only become better as the whole constitution of the individual improved.

It is because these conditions have not been appreciated, that therapeutic has often appeared to afford such striking diversity. There is no panacea; there are good medicaments, suited too peculiar cases, but which cannot always suffice and be adapted for every circumstance and their combination with other ingredients, may bring on results, that would have been vainly sought by using these mendicaments exclusively.

The doses generally prescribed are three grains of iodide to an ounce of water. If the discharge diminishes, the same dose is continued till the cure be complete.

When the discharge does not appear modified, either in its nature or quantity, after two days injections, the dose must be increased by fractions.

If any symptoms of excitement or pain arise, and the medicament is suspended for two or three days, or more, if it be necessary to ascertain whether the continued discharge does not proceed from the powerful action of the iodide.

The patients often feel considerable pains in the urinary meatus, there is a swelling and irritation, but the consequences are not likely to be serious, unless the medication be continued.

We deem it useless to renew the discussions of several authors, who consider injections as producing coarctations of the urethra; we have never found this the

case, and we think that strictures of the urethra may be attributed to the cicatrix of the divers ulcerations of which this canal is the seat, or to the other pathological alterations resulting from the continued inflammation of the mucous membrane.

The London Medical AND Surgical Journal.

Saturday, July 8th, 1837.

ROYAL INSTITUTION.

Fullerian Professorship.

Three years have now elapsed since the endowment of this Professorship by, as he was familiarly and truly designated, *honest* Jack Fuller.

The demise of this eccentric senator, placed at the disposal of the Managers of the Royal Institution a sum of money out of which was to be paid, by the will of the testator, one hundred pounds annually to some competent person for the delivery of twelve lectures on Human Physiology, and, with that extraordinary tact and ability for which Dr. Peter Mark Roget has ever been remarkable, Mr. Fuller was induced not only to order that the Doctor should be appointed to the professorship, but was also prevailed upon to continue it and its emoluments in his possession for three years certain. In justice, however, to Mr. Fuller, it is but right to state, that many overtures were made to him to continue the professorship for life to Doctor Roget; and it was probably owing to the repeated applications of this kind, that he was induced even to desire that it should be a triennial appointment.

Agreeably, however, to the will of Mr. Fuller, the Professorship of Physiology to the Royal Institution became vacant a few weeks since, and the following individuals, amongst numerous other candidates, immediately laid their pretensions to perform its duties before the Managing Committee,—Doctors, Grant, Sigmond, Trueman, and Todd, and Messrs. Owen, Solly, Mayo, Howship and Partridge. It was not for a moment contemplated, after the great dissatisfaction universally expressed by the patient hearers of the physiological orations of the late professor, that Dr. Roget would have had the temerity to again offer himself as a candidate; yet, strange as it may appear, the ex-professor was the first in the field; but soon finding that all chance of enjoying the sinecure was at an end, an attempt was then made to prove that it was the intention of Mr. Fuller to continue the Professorship to Dr. Roget for life. Even this new interpretation of the intentions of *honest* Jack Fuller, failing to convince the Managers, they were at length relieved from the imperative but painful duty of declaring themselves determined to dispense with the services of the late professor, by his retirement.

The proposal of Dr. Trueman to deliver a probationary lecture, in proof of *his* abilities to fill the vacant chair, met with as little success ac the tact of Dr. Roget; and, with the exception of Dr. Grant and Mr. Owen, the Managers dealt with the pretensions of the other candidates as unceremoniously.

Had the professorship being endowed for the purpose of giving a short course of lectures on Comparative Anatomy or Zoology, no choice could have been left in selecting from the list of condidates Dr. Grant and Mr. Owen; but it was rather a foolish proceeding, and certainly not carrying the intentions of the testator into effect, to select these two gentlemen to deliver twelve lectures on human physiology, because they happen to have gained a just reputation as Comparative Anatomists.

It would not have been a bit more absurd, had they selected Mr. Partridge, because his excellence is known as a mere demonstrator of human anatomy, or Doctor Todd, because he is the editor of the Cyclopædia of Anatomy and Physiology. In the absence of evidence as to the physiological abilities of the several candidates, we do think that the Committee of Managers of the Royal Institution, erred greatly when they did not accede to the honest and bold proposition of Dr. Trueman; particularly as their selection of Mr. Owen to fill the Fullerian professorship, was decided by a similar test; a few of the acting Managers having spared an hour from their mercantile pursuits to test his merits, by attending one or two of the lectures lately delivered by him at the College of Surgeons, on Comparative Anatomy.

Mr. Owen, we understand, will be spared the necessity of endeavouring to carry into effect the desires of Mr. Fuller, in consequence of the *liberal* individuals of the Council of the College of Surgeons having signified their desire that Mr. Owen should devote his sole labour in their service, for which they conceive *three hundred per annum* a very handsome remuneration!

That the liberal individuals of the Joint Stock Company of Gower-street, will, in all probability, lay a similar embargo on their Professor of Comparative Anatomy, is highly probable; for so justly fearful have the medical staff of this *enlightened* institution been, lest their emoluments might be lessened by competition, or their abilities suffer by comparisson, that some of their professors are bound in a deed, not to lecture within a certain distance of University College and the North London Hospital; a proceeding only to be equalled by those high-minded practitioners, who, when engaging an assistant at thirty or forty pounds a year, compel him to sign a paper, not to practice within *twenty miles* of the establishment!

The objections we have raised against Mr. Owen's appointment, apply equally to Dr. Grant. This *great* man, who justly merits this appellation for his talents as *Comparative Anatomist and Zoologist*, may give very little satisfaction as a professor of *Human Physiology*. We trust, therefore, the Managers of the Royal Institution will not be led away by their having heard a few popular lectures, on a subject widely different from the one for the proper execution of which they are now called upon to select the ablest individual.

Comparative Anatomy and Comparative Physiology are of the highest importance as scientific pursuits, but to the Human Anatomist and Human Physiologist, the beautiful truths of the former sciences are only of value in the light they shed, in unveiling the intimate structure of our several organs, and the uses that an all-creating being has destined them to perform in our economy. It is for the elucidation of these truths, that the Fullerian professorship was endowed; and the Managers, who have the selection of a fit and proper professor, will do well not to lose sight of this ob'ect in their choice.

THE ANATOMIST.

Tuberculum Loweri, an eminence upon the under surface of the sinus of the auricle and placed between the orifices of entrance of the venæ cavæ.

Septum auricularum, a membrano-muscular partition separating this auricle from the left.

Fossa Ovalis, an oval depression in the septum, which marks the situation of the foramen ovale, or the oval communication which existed between both auricles in the fœtus. The edges of this fossa

present a thickened margin, the anterior part of which is named the left or anterior limbus of the fossa ovalis, and the posterior, the right or posterior limbus. This fossa and its limbi exist in the right aspect of the septum on account of the valve in the fœtus, which is destined to close the opening between the two auricles when the pulmonic circulation is established, being situated in the left auricle and being applied to the foramen on its left aspect. We accordingly find the left aspect of the septum auricularum perfectly smooth.

Valvula Nobilis or *Eustachian valve*, a semilunar fold of the lining membrane attached by one cornu to the anterior limbus of the fossa ovalis, and continued around the anterior aspect of the inferior vena cava, to reach the posterior limbus of the fossa ovalis, to which it is attached by its inferior cornu.

Musculi Pectinati, the muscular bands situated in the auricular appendix.

Openings of the Venæ Cavæ. The superior cava opens at the upper and back part of the auricle, its direction being downwards, forwards, and inwards; the inferior cavæ opens beneath, in a direction upwards, backwards, and inwards.

Opening of the Coronary Vein is situated between the Eustachian valve and the right ventricle, and is guarded by a semilunar valve (the valve of the coronary vein.)

Opening of the Auricular Appendiz, is small and circular, and exists where this portion of the auricle joins the sinus.

Foramina Thesebii, small orifices on different parts of the auricle, supposed to be the openings of veins.

Right Auriculo-ventricular opening, the large opening by which the auricle communicates with the ventricle, the boundaries of each cavity being marked by a white line.

Right Ventricle, of a conicle form is joined by its basis to the right auricle, its apex being above the apex of the heart, in consequence of the apex of this organ being formed by the left ventricle.

Septum Venriculorum, a thick mu cular partition which separates one ventricle from the other.

Carneæ Columnæ, the muscular projections in the interior of the ventricle, which give it its irregular appearance.

Chordæ tendineæ, the delicate but strong tendinous cords which are connected by one extremity to the carneæ columnæ, and by the other to the tricuspid valve.

Tricuspid Valve, three triangular duplicatures of the lining membrane of the heart, strengthened by the chordæ tendineæ which pass from their apices to their bases. These triangular valves are attached by their bases to the right auriculo-ventricular opening, and by their apices to the chordæ tendineæ, and prevent the regurgitation of the blood from the venticle into the auricle by closing the opening of communication between both cavities when the ventricle contracts.

Orifice of the Pulmonary Artery is situated at the left extremity of the vase of the ventricle, close to the right auriculo-ventricular opening, which is situated inferior, posterior end to its right, and separated from the mouth of the artery by the largest triangular division of the tricuspid valve.

Pars Planum is a name given to that smooth portion of the ventricle, which leads to the mouth of the pulmonary artery.

Pulmonic Semitunar Valves extend from the line of junction of the pulmonary artery and right ventricle into the cavity of the former. These three valves are duplicatures of the lining membrane, and are attached by their convex edges to the roots of the pulmonary artery; their free concave margins presenting in their centre a small tubercle, called *corpus sesamoideum*. These valves, when the blood passes from this ventricle into the pulmonary artery, are thrown down, and thus, by closing the opening, prevent a reflux of the blood back again into the ventricle.

Left Auricle is placed at the upper and back part of the heart, and is of a quadrilateral form. It is smaller than the right auricle, and receives, at its four angles, the opening of the pulmonary veins; its parietes are much thicker than the right; its auricular appendix smaller, but the musculi pectinati are the stronger; with the exception of the auricular appendix its inner surface is smooth, and it communicates with its corresponding ventricle by the left auriculo-ventricular opening, which is situated inferior to the opening of the auricular appendix, and marked by a whiteish line. The septum auricularum presents towards this auricle a smooth aspect, from circumstances already explained.

Left Ventricle is longer, stronger, and smaller than the right; from its greater length it forms the apex of ths heart; from its greater strength it is of power sufficl-

ent to propel the arterial blood through the aorta and its ramifications. We consequently find the carneæ columnæ, the chordæ tendinæ, the bicuspid, or mitral valve, the parietes of the cavity, the aorta, which arises from it, and the semilunar valves, with their corpora sesamoidea, which guard the opening of this vessel, much stronger than in the right division of the heart.

The left auriculor-ventricular opening, and the mouth of the aorta, are situated at the base of this cavity, and are close to each other, the aortic opening being anterior, and both being separated, as in the right ventricle, by the larger division of the bicuspid valve. With the exception of the peculiarities just mentioned, the left auricle and ventricle are, in their anatomical configuration, similar to the right, and the several valves, muscular eminencies, tendons, cords, &c. serve similar purposes.

THE COLLEGE OF SURGEONS AS IT IS AND AS IT OUGHT TO BE.

To the Editor of the London Medical and Surgical Journal.

Sir,—Having read in the last number of your very excellent and liberal journal, some few remarks on "Mr. Owen and the College of Surgeons," I cannot, as a member of that body, refrain from offering you my individual thanks for the interest you have shown not only on this but on a thousand past occasions, to promote our welfare and expose the macchinations of an official body, constituted on the most illiberal principles. A body calculated not only to make every member feel disgusted at being connected with it, but also to check that ardour for discovery and improvement in the healing art which would necessarily follow from a more liberal system.

I should not hazard these assertions did I not feel convinced that every surgeon entertained the same opinions a myself, although from a variety of causes he may neglect to publish them, and this neglect is undoubtedly looked upon with a great deal too much indifference: for, how can slaves break through their chains by quietly smiling on their captivity? how can a wretched people borne down by political oppression free themselves from its thraldom by timidity, inactivity, and cowardice? or how can the members of the London College of Surgeons raise themselves to that dignified station which their education demands, by tranquilly speculating on what they might have been, or might still be, where they governed by individuals who studied *alone* their interest—who were willing *alone* to administer to their benefit and respectability?—No Sir, it is not by following this system of creeping quietly on unheard, and consequently unthough of, that we may expect our wrongs redressed—it is not by this torpor and apathy that we may hope to find more beneficial and salutary regulations substituted for the unwarrantable ones at present existing; but it is by raising our voices simultaneously that the thunder may reach to the hidden and mysterious recesses of the council chambers and strike on the ears of those so long deaf to the language of justice, that we may expect to convince them we view their proceedings with aversion and contempt, as being unjust, disgraceful, and calculated to lower us in the estimation of our professional brethren, who possess the diplomas of other more liberal institutions.

No person will be inclined to disagree with me in admitting that *some few* of the council deserve our admiration on account of their superior professional attainments; nor if their honesty and sense of duty had been equal to their talent, would any one have objected to their filling the responsible situations which they now do; but we should not permit our admiration for the acquirements of any individual (howsoever brilliant they may be) to blind us to the melancholy fact that they are oftentimes accompanied by a base desire on the part of the possessor to raise himself by degrading his professional brethren. But I would more particularly speak of another class of beings who form part of the council;—men who have no redeeming point to justify their being placed in the position they now occupy;—men who have no claim to our respect either from their abilities as surgeons or their labours in science;—men who possess not one spark of intellectual fire beyond the commonality; and are alike unknown to the profession and the world: in short, whose only recommendation to such an office is a mean and servile spirit, which bends to every measure advanced by their more crafty colleagues to sacrifice the independence of the only legitimate owners of the college.

These then are the men who assist in

framing every act of *corruption* which emanates from that *pre-eminently corrupt* association of Lincoln's Inn.

Now, were these posts (as they ought to be) held forth as the just reward of exalted genius and professional talent, what honest emulation would spring up in the breast of every surgeon, stimulating him to that ardent research which is so necessary to the advancement of a liberal profession; and giving him energy to grapple with, and strength to overcome the innumerable obstacles that present themselves in the arduous and difficult task of discovering truth from error. With what pride should *we* look back after having paid this tribute to real merit, and say, those are the men who in exalting themselves exalted us and laid the foundation of a liberal and philosophical independence.

I have honour to be
SIR, your admirer,
and your obedient, servant,
MEPHISTOPHICLES.

ZOOLOGICAL SOCIETY.

This society held its ordinary scientific meeting on the 27th of June, Thomas Bell, Esq., F.R.S., Professor of Zoology, King's College, in the Chair.

Mr. Gray, of the British Museum, exhibited two specimens of a small species of Fox, from India, apparently allied to *Canis Bengalensis*, if not identical with that species, for the purpose of pointing out the existence of a peculiar gland in the tail, which had hitherto escaped the observation of Naturalists; but which he conceived would form a valuable specific character to distinguish this from the rest of its congeneis. The gland in question is found on the upper surface of the tail, about a couple of inches from the root of that organ, and its position is marked by a tuft of coarse dark-brown hair, strongly contrasted, both in colour and quality, with the light-dun woolly fur which covers the surrounding parts. It was this contrast that first attracted Mr. Gray's notice. The Chairman having called upon Mr. Ogilby for any observations he might have to make upon the subject of the structure pointed out by Mr. Gray, that gentleman stated, that from the very slight examination which he had been able to give the subject during Mr. Gray's observations, he was unable to perceive any distinct gland, but that the quality and colour of the hair indicated, notwithstanding, the existence of a sebaceous secretion. He remarks further, that such characters were seldom or never confined to individual species; that the structure in question, however difficult it might be to assign its juncture, would be found, in all probability, to extend to the rest of the foxes; and that the long dark hair which forms the brush of the common species, may have been the only cause of preventing its earlier detection. Dr. Smith agreed in this view of the subject, and observed that the dark spots pointed out by Mr. Gray existed on the tails of two of the South African species, in the same position which they occupied in the Indian specimens exhibited to the society, and no doubt concealed sebaceous glands of the same description. Mr. Gray next exhibited a new species of large cat from India, remarkable for the great length and thickness of the tail, and intermediate in many of its characters, between the *Felis Macrocelis* and *Felis Iubata*, or Hunting Leopard.

Mr. Ogilby afterwards characterised a new species of Gibbon (*Hylobates*), which had been presented to the society many years ago, by the late General Hardwicke, and hitherto considered as the female of the Hoolock. A specimen of the latter species had been presented to the society at the same time, and from the same locality; but their specific identity was sufficiently disproved, not only by the fact of both specimens being of the same sex, and from being perfectly acquainted with both sexes of the Hoolock, but likewise by the marked difference of colour and external structure exhibited by the two animals. The greater height of the forehead and prominence of the nose in the new species, were pointed out as alone sufficient to distinguish it from all the other Gibbons; whilst its ashy-brown colour and large black whiskers rendered it almost impossible to confound it with the Hoolock, which has fur of a shining black, and a pure white band across the forehead. Mr. Ogilby observes, that we have had two distinct instances of real Apes from the continental parts of India; and referred to various passages of Pliny, in which the Roman Naturalist professed to describe different races of human beings from the remote provinces of India, whom he relates to have teeth like dogs, to live among trees, and converse by frightful dreams. These distorted accounts Mr.

Ogilby conceives to have been founded upon the vague tales brought back by the few Greek and Roman travellers, who, at that time, penetrated beyond the Ganges; and proposed therefore to call the new Gibbon by the name of *Hylobates Choromandus*, the name of one of the supposed tribes of men described by Pliny. The same gentleman afterwards exhibited and described the skin of a new species of Colobus, or four-fingered monkey from Africa, for which he proposed the specific name of *Colobus Leucomeros*, on account of the white colour of the thighs, the rest of the animal being a deep shining black.

Dr. Andrew Smith, whose recent arrival from the Cape of Good Hope with the most extensive and valuable collection of objects of Natural History, dresses, arms, and other articles connected with the native tribes of South Africa, perhaps ever brought into this country by a single individual, next exhibited and described four or five different species of the genus *Macroscelides*, or the Elephant Shrews, collected during his late interesting journey to the interior. Dr. Smith himself had originally characterized this curious genus in the *Zoological Journal* ten years ago, yet it has been recently reproduced under a different name, by Professor Lichtenstein, of Berlin. Dr. Smith gave some valuable details with regard to the habits of these animals, as likewise of four different species of *Chloromys*, which were likewise exhibited, out of which two at least were new to Science. We cannot conclude this report without congratulating the public, and more especially the scientific portion of it, upon the approaching exhibition of this gentleman's valuable and interesting collection at the Egyptian Hall. The exhibition will be found well deserving of repeated visits from every person interested in the productions of Africa, or the manners and customs of the Caffres, Zoolas, Matclapees, Bichuanas, and other tribes, whose late intestine wars have made them known to the public, or whose progressive improvement, under the care of the missionaries, is more silently watched by the philanthropist. Let it be understood that the exhibition is not for private emolument, it belongs to the South African Literary and Scientific Association, and is intended to enable that valuable and enterprising body to fit out a second expedition to the interior of that interesting Continent. May success attend their efforts!

ON THE APPLICATION OF SOLID NITRAS ARGENTI IN THE GONORRHŒA OF WOMEN.

By Alex. J. Hanney, M.D.

Gonorrhœa in the female is commonly said to be a very curable disease. It is certainly much more so than in the male; but on practical investigation of this disease, I found that it was not so curable as has been supposed—at least by the means commonly used. I tried every form and combination of astringents, particularly that of zinc; half an ounce of each in a pound of boiling water was my common injection. This occasionally effected a cure in eight or ten days; but for one case in which this took place in the time specified, ten resisted the treatment for three or four weeks. The records of Lock Hospitals bear this out to the full; and cases so treated often returned on leaving off the remedy. I had no better success from the solutions of the nitrate of silver; they were indeed, generally less effectual than the other; besides the method of injection is apt to be so irregularly pursued by the thoughtless characters in Lock Hospitals, that it will seldom be carried into complete and proper execution. It is a common boast of such persons how little they have regarded the injunction of the practitioner in this particular. I know one case where a woman used the alum and zinc injection just twice in nineteen days, whilst the practitioner fancied she was using it three or four times daily. It becomes of importance—of the utmost importance—that the treatment in case of Lock Hospitals be of such a kind as that the practitioner can either administer it himself, or be assured that it be done. The remedy to be noticed has this great merit; and if it had not half the efficacy which I know it to have, it would surpass all others on that account in the institution abovenamed. I had long tried in vain, and I repeat, had found very useless the injections of an astringent kind.

Having noticed that some cases of gonorrhœa, with ulceration in the vagina, and to which I had freely applied the nitras argenti, stopped in a most extraordinarily short period, I determined to select a few cases of uncomplicated gonorrhœa for trial. I accordingly did so, and found the effects to be very striking. I have repeatedly seen the discharge cease, never

to return, in twenty-four hours. On the day after the application, I have often seen it changed in character, that is, lose its purulent form, and disappear in twenty-four hours more. The discharge changes from the purulent to a thinner, clearer fluid, and ceases, I say in twenty-four hours thereafter, simply by using a weak solution of acet. plumbi., or only tepid water, as a wash. I have kept such cases repeatedly under my eye for a month, and can declare, that in the proportion of 95 to 100, there was no return of the discharge; yet no remedy had been employed after the nitrate. Though in some few cases there is a little pain produced, yet in by far the greatest number of instances, no pain is experienced from the introduction and most free application of the caustic. It is painful, it is true, when it touches sores on the labia, or more internal parts, but that smarting soon goes off, or, at all events, an anodyne instantly relieves it. In the greater number of cases it produces no phlogosis of the parts with which it comes in contact; but in some (say in one case in twenty) it does irritate to a degree that proves painful for a few hours, but never, in any one instance, have I seen the pain continue longer than a few hours. I have never seen bubo induced by it. I have used it in patients in every month of pregnancy with the best effects, and never saw abortion produced. I know, by as careful examination as I could make, that it does not suppress the catamenia: in short, I fearlessly give it out as an infallible and safe remedy for this disease, without any one drawback but the vain fears of persons of no experience, or of such as are determined to oppose it. I have now employed it in above 300 cases with unvarying success, and shall continue to use it.

I am the more particular in the notice of the above groundless evils and vain fears, since I have heard them repeatedly stated as likely to be overwhelming objections against the practice—but only by persons, I must say, who have never seen the method practised. I know, on the most ample experience, that these objections are without any foundation whatever. I am at all times very unwilling to come forward with my remarks before the public, but I have no alternative; I must now speak out for myself, as I understand the treatmeut has been freely canvassed in the Glasgow Medical Society, where the inexperienced, on the strength of some eight or ten cases, attempted to demolish the careful observations (conducted before persons of competent judgment, and whose certificates are appended) of several years, and on hundreds of cases. I had the honour of introducing the practice into the Dublin Lock Hospital in August last, and I hope we shall be favoured with a report from that extensive and well-conducted institution. I may add, that in about six cases only, out of more than three hundred, the vaginal discharge has continued after repeated applications: in all of these I found, by the use of the speculum vaginæ, that there was ulceration of the lining membrane of the vagina, and that the case was not gonorrhœa.

The application of the nitrate was not required more than once in 280 of the 300 cases. I may also add, that in two obstinate cases, I found the disease to be kept up from *urethral discharge*, whilst that from the vagina had ceased. I then applied the nitrate to the urethra, and a cure was accomplished in both instances, —in one by a single introduction of the pencil, and in the other it required to be once repeated, at an interval of four days.

So far from the catamenia being suppressed by it, I have known more instances than one of the catamenia flowing for the first time after a long obstruction, on the use of the nitrate. I am so conscious of the benefit and complete success of the remedy in question, that I commit it to the profession, to whom I should not venture to make statements so confidently, unless I believed myself standing on pretty sure grounds.

I shall conclude by describing my method of using it. I introduce a stick of nitrate of silver into a quill, and tie a thread firmly round the lower part of the quill to fasten the caustic, which I leave projecting beyond the quill about half an inch. I generally smear the quill with a little lard, and introduce the nitras argenti up to the os tincæ, or as far as it can be made to ascend in the vagina. I then deliberately and slowly withdraw it, turning it round so as to bring it in as extensive contact as possible with the lining membrane of the vagina. I may add, that by accident, the nitrate of silver has more than once broken in the vagina, and could not be found. It caused me much alarm and anxiety at first, but after the following case I was not so affected; and though I would carefully avoid it, I now regard the occurrence as of very little importance.

The late Mr. John Hebertson, who acted as my assistant in the hospital, came

in breathless haste, and in the utmost state of alarm, to call me to his assistance to extract a piece of nitrate of silver from the vagina of a woman, who having previously been in the hospital, and cured by the use of the remedy in question, came to Mr. H. to have it again applied. On repairing to the house, we searched in vain for the caustic, but had abundant proofs that it had dissolved in the vagina. The quantity he asserted to be above two drachms. She suffered little or no pain, and a perfect cure was straightway accomplished.—*Medical Gazette.*

INJURIOUS DILATATION OF THE OS TINCÆ.

By Dr. E. W Murphy.

If the nature of the uterine structure, consisting of muscular and fibro-elastic tissues, be considered; if their properties be borne in mind, and we contrast the action of sphincter muscles generally with the manner in which the os tincæ is opened, namely, by a slow painful dilatation, aided by a fluid pressure, and compare it with the subsequent dilatation of the perinæum, the dilatation of the os tincæ must be considered to be, in a great degree, a mechanical effect; the resistance arises from the reaction of the fibro-elastic tissue, and not from the contractions of muscular fibre; nevertheless, irritation may excite their action, and thus present an impediment to the natural action of the uterus, retarding dilatation, and rendering it essential, consequently, in order to avoid such an effect, to refrain from rupturing the membranes. The os tincæ bears irritation very badly, and if much exposed to it, will certainly manifest a sub-inflammation, which at first retards its distension, and if suffered to increase will soon affect the general system. Daily observation during my residence at the *Lying-in Hospital*, Dublin, has forced this opinion upon me. The natural anxiety of those who were attending the patients, to watch the progress of parturition, gave rise to frequent examinations per vaginam, and the effects of such irritation has been to excite the above-mentioned tendency, manifested by a suppression of the usual mucous discharge, by heat and tenderness, and a tumid, painful, unyielding condition of the os tincæ; and especial caution was necessary to prevent such frequent examinations. The long continued irritation of the head would produce a nearly similar effect. Patients have been sent into the hospital where these symptoms were unnoticed. The tenderness and swelling increased; a serious irritating discharge was in the vagina; the os uteri was perfectly rigid, and the muscular action of the uterus and bladder was suspended; urine accumulated in the one, and in the other the true pains where changed for distressing spasms. Thus, a case in which there was no real difficulty was converted into one of considerable risk.—*Dublin Medical Journal.*

NITRO-MURIATIC ACID BATH.

By Dr. Lendrick.

The nitro muriatic acid is now unjustly described as of little use. Those, however, who decry it had contented themselves with a partial application of the acid to the lower extremities. Many years ago I accidentally recommended it as a *general* bath, and the effects were so surprising that I have never prescribed it in any other form since. Several cases in which it had been used ineffectually in the common way have come under my care, and complete success has followed total immersion in the acidulated water. The patient is placed in a common bath, at a temperature of from 90 degrees to 95 degrees, twice or thrice in a week, for 15 or 20 minutes. Into each bath of 30 or 40 gallons is poured from an ounce and a half to two ounces of concentrated nitric, and from two to three ounces of muriatic acid; the proportion being nearly that of 2 to 3. This bath may be continued for months, not producing either any derangement of the general health, ptyalism, or eruptions as described by some authors, though, as idiosyncracies will occasionally occur, its application ought always to be superintended by a medical practitioner. My own opinion is, that it is admirably calculated in most diseases to produce the beneficial, without the risk of the injurious, effects of mercury. There is a disease known to the public by the name of *liver consumption*. It generally occurs in scrofulous habits, and is probably connected with tubercular growth in that viscus, as well as with the commencement of pulmonary phthisis. Together with the general derangement of the biliary and digestive functions,

there are frequently developed in females, hysteria, with chlorosis, or morbid menstrual secretion. In such cases I have never found any treatment so effectual as the nitro-muriatic acid bath. The hepatic, and even the pulmonary symptoms, seem to yield, and the patient regains flesh and strength. I do not, in all the cases, rely on the bath exclusively; but in some, which had baffled every other treatment, the bath alone seemed to accomplish a cure. Even where mercury had proved injurious, the bath seemed to accomplish all that could be expected. Every addition to our stock of non-mercurial, or anti-mercurial remedies is valuable. The merits of sarsaparilla, nitrous acid, chlorine, &c., and especially (as judiciously recommended by Dr. Wallace) the hydriodate of potash, are well known. I consider, however, the nitro-muriatic acid bath as inferior to none, and superior to many; and being an external application, it in no way interferes with the administration of the others.—*Dublin Journal.*

GLANDERS IN MAN.

By Andrew Brown, Esq. *Surgeon 2nd Dragoon Guards.*

I am not yet acquainted with any case but the following, where glanders has been communicated to man by other means than through incised or lacerated wounds, that is to say, either by cutaneous absorption, by effluvium, or by the incautious application of glandered matter to the nasal linings, in picking, scratching, or blowing that organ:—Corporal John Wells, aged 38, a tall, healthy looking man, nineteen years in the corps, and never before on the doctor's list, on the 16th of April last, was suddenly awakened from an unrefreshing sleep by rigors, headache, and irritibility of stomach. In hospital (at Cahir Barracks, Ireland,) next morning he complained, in addition, of severe continued pains, and stiffness of all his large joints, excessively aggravated on the slightest motion. These are the constant precursors of fatal acute glanders and farcy in the horse. On inquiry, it appeared that he had sole charge of a glandered horse for some time previous, which had been destroyed on the evening of his attack; and that he had exerted himself much in cutting up the carcass. But these circumstances not creating the least suspicion, his complaint was considered to be severe acute rheumatism. However, two days after admission, finding that his constitution was no longer able to bear the very active treatment employed, Dr. Home and myself became truly alarmed at the unconquerable violence and novelty of the disease.

The pain, night and day, became excessive, particularly over the left shoulder, where the scapula was slightly tumefied, although not inflamed; leeches, applied over its entire surface, bled profusely, for some hours, without relief, his sufferings continued unabated; on the 24th the tumour had a dark livid colour, and was so large as to resemble the shoulder of a man recently and severely punished.

Similar tumefactions, but more circumscribed, were now observed on the legs, arms, and sacrum, and one, over the left temple, distorted the entire face. The right nostril was contracted, and gummed with an inspissated discharge; and he complained of constriction of the throat, with difficulty in swallowing cold liquors, but not warm; the posterior fauces were much inflamed, and of nearly a purple hue. The suffering now baffled every effort to procure rest; not even whilst in the warm bath had he a moment's respite from pain. His thirst was great. His excretions, urinary and alvine, were kept natural in every respect. On the 28th several pustules were observed, resembling yaws, particularly over the neck and shoulders, and inside the arms and thighs. Several of the *tumours* now were running rapidly into gangrene, wholly unimpeded by tonics and antiseptics; nature was at length exhausted, his countenance frightfully haggard and livid, his entire surface bathed in a cold clammy sweat, and of a pale leaden hue. He held out, in partial somnolency and low muttering delirium until the 30th, when death released him from his misery, having been twelve days under treatment.

Autopsy, eighteen hours after death.—The entire surface nearly covered by black gangrenous tumours, each surrounded by numerous small vesications, which, on cutting into them, were found to be merely elevations of the cuticle, filled with a dark, violet-coloured, inspissated lymph. A suspicion having been recently entertained that this disease had its origin in glanders, the absorbents of each arm were first minutely examined, to their termination in the axillary glands. Those vessels, however, as well as the glands, were found in their natural state; nor

was there the slightest appearance of either absorbent, glandular, or cutaneous inflammation, or of any recent cicatrices, chopped or scratched fingers; or, in short, the slightest breach of integument, or abrasion of skin, by which absorption of morbid matter into the system could have been facilitated.

On removing the scalp, and thereby dividing the tumour already specified, we observed, immediately over the left superciliary ridge, a cluster of tuberculated bodies of various sizes, imbedded in a lamina of the cellular tissue exterior to the pericranium, and our highly-talented veterinary surgeon, Mr. Woodman, unhesitatingly recognized a strong resemblance between *these* and *those* usually found in the nasal linings of glandered horses after death.

The brain was much more pale and soft than ordinary, with rather a larger proportion of fluid in the ventricles; the Schneiderian membrane appeared throughout pale, thickened, and infiltrated; and in the right frontal sinus was found another cluster of well-defined, ulcerated, glanderous tubercles. The posterior fauces were highly inflamed, and of a dark purple; right tonsil, ulcerated in patches, but the thoracic and abdominal viscera were all perfectly healthy, except that the heart was rather pale and flabby.

On removing the whole of the diseased mass from the scapula, that bone was observed nearly covered by a cluster of grey, circular tubercles, the whole composed of fine cellular tissue, enveloped in small cysts, and firmly attached to the periosteum, differing only in this respect from those found in the pericardium. (?) The tumours on the sacrum and extremities all exhibited each precisely the same crop of tubercles adhering to the periosteum underneath. All the muscles were blanched, flabby, and softened, and the cellular membrane was infiltrated with a yellow serosity.—*Ib.*

A COURT PHYSICIAN.

In an essay written by Sir Henry Halford, and published a few years ago, we find the following remarkable statement made, regarding the line of conduct to be pursued by physicians, in the matter of publishing accounts of the health of royal personages. The passage, says the Quarterly Review, is "in the highest degree honourable to the physician who writes and to his illustrious patient."

"If in cases attended with danger in private life, the physician has need of discretion and sound sense to direct his conduct, the difficulty must doubtless be increased when his patient is of so *elevated a station that his safety becomes an object of anxiety to the nation.* In such circumstances, the physician has a duty to perform, not only to the sick personage and his family, but also to the public, who, in their extreme solicitude for his recovero, sometimes desire disclosures which are incompatible with it. Bulletins respecting the health of a sovereign differ widely from the announcements which a physician is called upon to make in humbler life, and which he entrusts to the prudence of surrounding friends. These public documents may become known to the royal sufferer himself. Is the physician, then, whilst endeavouring to relieve the anxiety or satisfy the curiosity of the nation, to endanger the safety of the patient, or, at least, his comfort? Surely not. But whilst it is his object to state as accurately as possible the present circumstances and the comparative condition of the disease, he will consider that conjectures respecting its cause and probable issue are not to be hazarded without extreme caution. He will not write one word which is calculated to mislead; but neither ought he to be called upon to express so much as, if reported to the patient, would destroy all hope, and hasten that catastrophe which it is his duty and their first wish to prevent."

"Meanwhile, the family of the monarch and the government have a claim to fuller information than can, with propriety or even common humanity, be imparted to the public at large. In the case of his late majesty, the king's government and the royal family were apprised, as early as the 27th of April, that his majesty's disease was seated in his heart, and that an effusion of water into the chest was soon to be expected. It was not, however, until the latter end of May—when his majesty became so discouraged by repeated attacks in the embarrasment in his breathing, as to desire me to explain to him the nature of his complaint, and to give him my candid opinion of its probable termination—that the opportunity occurred of acknowledging to his majesty the extent of my fears for his safety.—— After this, 'when he had set his house in order,' I thought myself at liberty to interpret every new symptom as it arose in

as favourable a light as I could, for his majesty's satisfaction; and we were enabled thereby to rally his spirits in the intervals of his frightful attacks, to maintain his confidence in his medical resources, and to spare him the pain of contemplating approaching death, until a few minutes before his majesty expired."

How court-like is this! A royal personage is to be spared the contemplation of approaching death till a few minutes before dissolution! The nation, also, must not be told the truth, for fear of hurting the comfort of the royal patient. Perhaps this is all right. But it is proper that the public should, at least, know what is the practice in such cases—what is the extent of credit they should give to the bulletins published for their information.

MEDICAL STATISTICS.

STATISTICS OF SUICIDE.

[We find, among the miscellanies of *Wildberg's Jahrbuch d· ges. S. A. für* 1837, several scattered notices on the statistics of suicide. We have collected them, and here present them at one view to our readers]

Paris. The number of suicides in Paris were, for

1830, 269	1832, 369	1834, 436
1831, 377	1833, 333	1835, 477

This is in the ratio of about *one suicide* out of every *one hundred deaths;* while, observes the report, in England, the land of suicide, (!), the proportion is not greater than *one* out of every *five hundred deaths.*

[Although we think it cannot be denied that the average number of suicides, in relation to the total death, is considerably less in England than in France, we much doubt whether the ratio here given, of 1 in 500, be correct; since so little attention is paid by the government of this country to the collection and publication of the details.]

Naples. During the year 1836, out of a population 357,283 souls, there were not more than thirty-one cases of suicide.

St. Petersburg. The number of suicides in this capital, for the years 1831, 1832, and 1833, did not exceed 104; which presents an average of about thirty-four annually. They were mostly confined to the lower classes of society.

Bohemia. In this kingdom, during the year 1835, the deaths amounted to 119,483. Of these there were 188 cases of suicide, which is in the ratio of about one suicide out of six hundred deaths.

Lower Austria. From the 1st November, 1835, to the end of October, 1836, there were 49,556 death, and out of these 109 cases of suicide. This gives a ratio of about one in 457.—*Wildberg's Jahrbuch d. ges. S. A.* 3 B. 2 h. 1837.

STATISTICS OF STILLBORN CHILDREN.

[We consider this subject important in relation to infanticide. When, in a doubtful case, a medical jurist attempts to estimate the probability of a child having come into the world living or dead, he assuredly ought to be prepared with a knowledge of the results which have been derived from statistical enquiries relative to live and still birth. If this kind of knowledge answer no other purpose, it must have the effect of rendering him cautious in the expression of an opinion. The subject, however, is not without interest to the general practitioner in numerous other points of view. In the following extracts we shall not confine ourselves strictly to foreign sources, being anxious to render our view of the subject as complete as we can.]

I.

Bohemia. In 1835, the births were in this kingdom, 160,871, of which 2,561 children were still-born. This nearly gives a ratio of only one child born dead out of every sixty-three births; an extraordinarily low proportion.

Lower Austria. From Ist November, 1835, to the end of October, 1836, the births were 49,658; of which number, 1,215 were still-born children. This is nearly in a ratio of one in forty-one. The still-births were twice as numerous among *legitimate* as among *illegitimate* children; and, with regard to *sex*, the still-born males were to females as about four to three among the legitimate births. Among the still-born illegitimate children, the sexes were nearly equal.

Presburg. In the year 1835, there were born 1,385 children; of which fifty-five were born dead. This is a ratio of about one in twenty-five.

Innsbrück. From the 1st November, 1834, to the end of October, 1835, the births in this town amounted to 314, of which seventeen were still-born; a ratio of one in eighteen. The still-born males, even this small number, were to the

females as two to one.—*Wildberg's Jahrbuch, loc. cit.*

II.

Geneva (City). During the ten years from 1814 to 1823, there were born, as a mean annual average, 511 children; out of which number thirty-four were born dead, giving a ratio of one to fifteen for the still births. In the ten years from 1824 to 1833, there were born, as an annual average, 581 children; of which thirty were born dead, about one in nineteen. The mean annual births were, however, for the whole period of *twenty years* over which the observations extend, 556; and the mean annual number of still-births was, for the same period thirty-two, about one in seventeen. Of the mean annual births, the males were to the females as, 284 to 262; in the still-births as eighteen to fourteen. We learn by this that, as the preponderance of total births is on the side of the male sex, so is the preponderance of still-births. It is to be observed, however, that the number of children born dead was liable to great yearly fluctuations, being sometimes as high as one-eleenth, and sometimes as low as one-twenty-seventh of the total births.

In a medico-legal view, it is interesting to ascertain the ratios of the still-born among *legitimate* and *illegitimate* children, whenever this is practicable; since the great majority of alleged cases of child-murder lie among the *illegitimate.*

Out of 9,833 *legitimate* births, during the whole period of twenty years, 517 children were born dead, or one child was born dead in every nineteen legitimate births. Out of 1,092 *illegitimate*, there were 129 born dead, or one in eighty-four cases.

These results, deduced from observations on nearly eleven thousand births, show that the still-born are more than *twice as numerous* among illegitimate as among legitimate children. This exactly what we might expect, since the circumstances under which illegitimate children are born tend to render their coming into the world alive very uncertain. The want of care and attention at the time of delivery, which generally takes place in secret, as well as the anxiety of mind under which the mother is commonly labouring, are facts that perhaps sufficiently explain the difference observed. The result of the Genevan observation is, it will be seen, entirely opposed to that deduced from the statistical survey of Lower Austria. Notwithstanding that, in the two cases, the total births of the illegitimate children are nearly *equal*, and that, in respect to legitimate children, the total births in Lower Austria are *five times as numerous* as those of Geneva; and, therefore, admitting only one-fifth of the possible error which would attach to those of Geneva. we are inclined to place greater confidence in ihe Genevan result, not only from the very high probability which attends it, but also from the circumstance that observations extending over a long series of years, are much more to be trusted than those which are confined to a single year.

Among the illegitimate, it was found that there was a slight preponderance of male over female births, as well as among those children which were born living as among those which were born dead. The number of stili-born males, taking the total births, was much greater than that of femaies. The ratio for the whole period of the Genevan tables, twenty years, was as four to three. This diffrrence has been ascribed, and perhaps with justice, to the generally greater size of the head and body in the male; conditions which necessarily expose the child to greater risk during delivery. As a summary of the still-born to the total births, the following statement may be taken:—

1 male born dead in . .	15·59 births.
1 female	18·60 —
1 child	16·91 —

Paris. To his remarks on Geneva, the author of the report, M. Mallet, has appended a statistical summary, derived from observations, made during a period of *thirteen years*, namely, from 1819 to 1832, in the capital of France. It is as follows:—

1 male born dead in . .	16·48 births.
1 female	19·67 —
1 child	17·90 —

Marseilles. Aecording to the statistical survey of the department of the Bouches du Rhone, in the city of Marseilles there is one child born dead in sixteen births.—*Ann. d'Hygiène et de Méd. Lég. Janvier*, 1837.

III.

Prussia, In the recently published volume of the Statistical Society of London, we have met with a valuable paper founded on the researches of M. Hoffmann, of Berlin. It represents a statistical view of the births and deaths in the

Prussian states during a period of *fifteen years*, from 1820 to 1834. It is entitled to our consideration, not only from the reputation of the compiler, but from the fact of its comprising several *millions* of births, extending over a long period of time. We shall confine our extracts to that portion of the paper which is relevant to the question now under examination.

In the fifteen years, there were born in the Prussian states, 7,593,017; Of these, there were born dead 257,068. This gives a ratio of rather above one child born dead in every 29·14 births; that is to say, the still-born formed rather more than 3 31 per cent. of the total births.

This vast compilation also shows the same striking difference in the mortality of male and female children during birth which we have already had occasion to point out, M. Hoffmann refers this difference to the same causes as ourselves. In the above period of fifteen years there were born, of males 3,906,544, and of females, 3,686,473; of which were born dead, males 147,705, and of females 108,363. These numbers give a general ratio of males born dead to females of 1·35 to one; or, for every one hundred stil-born females there were 135 still-born males.

The influence of legitimacy or illegitimacy is not noticed in this paper, probably from the great difficulties which must have attended the collecting of satisfactory evidence on this point, among so many millions of births.—*Trans. Stat. Soc. Lond.* 1837. Vol. i. Part 1., p. 132.

IV.

From October 1835, to October 1836, in the Lying-in Charity of Guy's Hospital, there were 630 births, and among these, thirty-four children were born dead, in about *equal proportions* of the two sexes. It is worthy of remark, that only eight out of the total number of deliveries were premature; an important circumstance, and one which ought always to be ascertained, to allow of fair statistical comparisons; since it is beyond all question that the ratio of live to still births must vary for the different periods of gestation at which a child is born. The ratio of the still-born here amounts to one-eighteenth of the total births.

Out of 766 applicants to the Charity during the year, it was ascertained that 643 had already given birth to 2,460 children; of which 133 were still-born—a ratio of one in eighteen. It is curious thus to find that the ratios should be alike, although, as will be perceived, the births from which they were deduced were four times as numerous in the one case as in the other. This fact, in our view, furnishes at the same time strong intrinsic evidence of our having reached a near approximation to the truth.—*Dr. Ashwell in Guy's Hospital Reports*, IV. *April*, 1837.

[Our readers will have perceived that some of the results differ very widely, but, if we except Bohemia (one to sixty-three), and Lower Austria (one to forty-one), which numbers representing, as they do, merely *one annual result*, and differing so materially from all the others in our list, we do not hesitate to exclude from our calculation, we shall have a mean result of one-twentieth; i. e., that *one child out of twenty is still-born*. This result, it is to be observed, is deduced, at the lowest computation, from nearly *eight millions* of births]—*British and Foreign Medical Review*.

BIRMINGHAM EYE INFIRMARY.

Report of the Cases attended by R. Middlemore, Esq., from January 1, *to December* 31, 1836.

The following Report is contained in the Transactions of the Provincial Medical and Surgical Association, published within these last few days.

Simple acute conjunctivitis, 116. Chronic conjunctivitis, 45. Acute conjunctivitis, with pustule or ulcer on the cornea or conjunctiva, 98. Acute conjunctivitis with puriform secretion, 55. Purulent conjunctivitis of new-born infants, 45. Irritable conjunctivitis, 53. Strumous conjunctivitis, 46. Effusion of various kinds beneath the conjunctiva, 13. Disease of the semi-lunar membrane and lachrymal caruncle, 4. Corneitis, 26. Vascularity of the cornea, 7. Pannus, 4. Opacity of the cornea, 44. Staphyloma of different kinds, and of various parts, 13. Ossification of the cornea, 1. Impaction of foreign bodies in the cornea and conjunctiva, 22. Scletrotitis, 13. Ulceration of the sclerotica, 3. Morbid growth from the cornea and sclerotica, 2. Pterygium, 3. Simple acute iritis, with or without ulcer of the cornea, onyx, or hypopium, 34. Chronic iritis, 3. Syphilitic iritis, 3. Strumous iritis, 5. Pro-

lapse of the iris, 4. Vacillation of the iris, 3. Chorodoiditis, 6. Varicose ophthalmia, 3. Retinitis, 2. Cataract, 29. Fungoid and other tumours within, and upon the surface of, the eye-ball, 7. Amaurosis of various kinds and in different degrees, 50. Diseases of the lachrymal apparatus, 21. Strabismus, 7. Ophthalmia tarsi, 71. Lippitudo, 7. Hordeolum, 4. Entropium, 5. Ectropium, 8. Inflammation of the eye-lids, 12. Ptosis, 1. Ulceration of the eye-lids, 6. Tumours in the eye-lids, 20. Wounds of the eye and its appendages, 30. Adhesion of the eye-lid to the eye-ball, 4. Congenital defects, 6.

Irritable Ophthalmia.

"In three examples of irritable ophthalmia, which have fallen under my observation during the past year, and which occurred in poor women, who had continued to suckle for an injudiciously long period, in the hope of deferring their subsequent pregnancy, one eye only was affected in each case; and, on inquiry, I found that the subjects of the malady suckled only with the breast of the side corresponding to the diseased eye. I do not know a more decided proof of the asserted connexion subsisting between protracted lactation and the irritable form of ophthalmia, which occasionally affects the eyes of females during that period."

We do not know that this can be considered *very* decided evidence of the connexion between lactation and ophthalmia. The best evidence is the frequent coincidence of the two affections, such frequency of coincidence or of sequence constituting, in fact, the ordinary evidence of cause and effect, or of the relations of one thing to another.

Carcinomatous Growth from the Cornea and Sclerotica.

Joseph Wilkes, aged 49, residing at Redditch, has been suffering for several weeks from a painful tumour arising from the surface of the eye. It is about the size of a shilling, of a red colour, firm texture, and very uneven surface; it is firmly attached to the surface of the sclerotica and cornea, but chiefly to the former; it is not very painful when touched. The conjunctiva is inflamed, but the cornea and iris are not so affected. There is very copious lachrymation, and considerable intolerance of light. The patient is employed as a waggoner; and he states that the disease has come on gradually, and from no cause with which he is acquainted.

Mr. Middlemore was desirous of removing the whole anterior part of the eye-ball. He was over-ruled, but no doubt he was right. He dissected away the morbid growth from the surface of the membranes to which it adhered. In about two months after the patient's return home, the growth re-appeared, and has since rapidly increased. But the patient will not submit to another operation.

The growth, when examined, was found to be hard, and interspersed with firm white bands and spots; its surface was vascular, and had a rough craggy appearance. It more nearly resembled cancer of the eye-ball than any other disease.

Melanotic Growth from the Semilunar Membrane.

"I have now a patient in attendance at the Eye Infirmary, in whom there is a filmy prolongation, of a melanotic character, of the membrana semilunaris; and, just at the temporal side of the lachrymal caruncle, there is also a dark-coloured tumour of the size of a large pea. It appears, though much darker, a good deal like a portion of iris recently prolapsed through an opening in the cornea. The disease has existed for several years, but has lately much increased owing to her having scratched it whilst rubbing her eye. I have told this poor woman that nothing but surgical operation is likely to relieve her, but she will not, at present allow me to remove the diseased part. I have never before seen a case precisely similar to this, during the whole course of my practice.

Since the preceding paragraph was written the tumour increased in size so very rapidly that the patient was anxious to have it removed. This was readily accomplished by means of the small curved scissors, as it was but slightly adherent to the semilunar membrane, and quite unattached to the sclerotica. It was covered by the conjunctiva, and appeared to have been chiefly developed in the subconjunctival cellular membrane. The tumour itself was not organized: it consisted of a firm substance of an irregular dark colour, its external surface being densely black, its middle and posterior portions being of a dark brown colour, intermixed with lines and streaks of an extremely black appearance. The whole of the tumour became comparatively pale after it had been immersed in spirit of wine three or four days."

Opening a small Abscess.

"If you consult those books which treat of abscess, you will find it laid down as a general rule, that where the abscess is of small size, it ought to be left to nature to effect an opening, because this, it is said, will be small, and consequently leave but an inconsiderable cicatrix. According to this view, small abscesses are to be left to themselves, provided they be not too indolent, nor advance too rapidly. But I reject this method; for if the aperture made by nature be small, why should not that made by art be made small likewise? It is only necessary for this purpose that we use an instrument with a narrow blade, and that we make a simple puncture."—*Lisfranc. Med. Gaz.*

To prevent Scars in the Neck.

"Abscesses of the neck ought to be opened by means of a simple puncture. I do not now allude merely to small abscesses: I have opened, in this manner, purulent depots of considerable size, and although the extent of the incision was not in proportion to the collection of matter, yet was all the pus evacuated, while the cicatrix which remained did not exceed that of a leech-bite. This precept is of great importance, not only to the welfare of the patient, but to the reputation of the surgeon."

If there is a lodgment at the lower part, a small counter-opening is necessary. The incision, in any case, should always be made transversely, in the direction of the natural folds of the skin.—*Ib.*

How to open a large Abscess.

"The bistoury is to be held in the first position; the two last fingers, separated from each other, and extended, are to be placed, if possible, beyond the tumour, as a *point d'appui;* the tissues which are penetrated must be divided in a perpendicular direction: the middle finger placed on the blade of the instrument, serves to regulate the depth of the incision. This is very important, for if the instrument cuts ill, or if the texture be hard, we are under the necessity of pressing more strongly on the parts to be divided; and without the precaution of having the finger as I have described, we should incur the risk of plunging in the instrument too far. Besides, it is easy to push the bistoury farther in if necessary, by drawing back the finger on the blade of the instrument. We must do all gently: thus, when the blade arrives in the collection of pus, the hand will perceive the fact, because the knife is now passing through a less resistance than before. The only exception to this is where there are muscular contractions of a nature to interfere with the resistance. I cannot well give you a measure of the slowness necessary in this proceeding; but always remember this fundamental principle in operative surgery—*tuto* is better than *cito*."—*Ib.*

It is refreshing to hear a man of the admitted dexterity of Lisfranc, of a dexterity of Lisfranc, of a dexterity probably quite unequalled, denouncing the stop-watch mode of operation. A master of celerity himself, he points out the folly, we might almost say the wickedness, of making it the paramount consideration.

How to open a deep Abscess in the Neck.

"Take the neck as an example. I there make an incision parallel to its axis, and which divides, layer by layer, successively, the skin, the cellular membrane, and, if necessary, the superficial aponeurosis. I next take a blunt probe, and limit the extent to which it is to penetrate the textures, by holding it between the thumb and forefinger. I then introduce this to the bottom of my incision, and make it pass on by separating, or rather pushing, aside the fibres of the parts beneath. Whenever the instrument has entered the abscess, there is a cessation of resistance, besides which I perceive drops of pus oozing along the sides of the instrument. I then push it upwards and downwards, so as to enlarge the opening, and thus the matter finds a ready exit."—*Ibid.*

JOINT STOCK COMPANY OF GOWER STREET.

CHAIR OF CHEMISTRY.

The election of this Chair has at length been decided in favour of Dr. Graham of Glasgow, and late Professor of the ANDERSONIAN UNIVERSITY in that city. Out of the numerous candidates who laid their pretensions before the council, Drs. Graham and Phillips were the only individuals selected; and the difficulty there was in estimating the abilities of these gentlemen may be conceived by the fact of each having eight votes. Lord Brougham, however, having the casting vote, as chairman, gave it in favour of the Scotch professor. In the present crowded state of our columns we have not space but merely to announce the appointment; neither can we, for the same reason, give insertion to the letter of *Scotus*.

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXXI.

THERAPEUTICS.

Evacuant Medicines—Errhines—Mode of action—Diseases in which they are useful, and those in which they are dangerous—Sternutatory effect of looking at the sun—Sialagogues—Local and general sialagogues—Condiments—Medicines which produce ptyalism—Demulcents—Difference between demulcents and expectorants—Demulcent purgatives—Expectorant purgatives—Mucilaginous demulcents—Mistura mucilaginosa of the Edinburgh Infirmary—Oleaginous demulcents—Gelatinous demulcents—Pectic acid—Farinaceous demulcents—Expectorants—The only four Balsams of the Pharmacopœia—Emetics—List of indigenous emetics—Purgatives—Laxatives—Cathartics—List of purgatives which admit of ounce doses—Drastic purgatives—Saline purgatives—Resinous purgatives—List of medicines which produce liquid stools—Medicines which act on different parts of the intestines—Carminatives—Origin of the term—Families of plants which furnish them—Diuretics—Animal, vegetable, and mineral diuretics—Emmenagogues—Tonic, antispasmodic, and purgative emmagogues—Effects of dancing, riding, hip-baths, electricity, and sexual intercourse—List of emmenagogue plants—Hiera picra—Secale cornutum—Diaphoretics—Diseases in which they are most used—Uncertainty of their action—Necessity of a hot regimen—Contrary rule with diuretics—The best diaphoretic—Advantages of combination—James's powder and Dover's powder——Diaphoretics for fat patients—Effects of venesection—Epispastics—Rubefaciants—Vesicants—Suppurantia—Caustica—Effects of combining cantharides with vinegar—Munro on vesication with boiling-water—Best mode of applying it—Blistering with a tea-kettle in sciatica—Vesicating with gun-powder—Tartar Emetic ointment—Difference between escharotics and caustics—Proper mode of applying nitric acid and muriate of antimony—Revulsives—Ancient notion of peccant matters—Supposed benefit of a profuse discharge—Revulsives which produce no discharge—Origin of the term "Counter-irritation"—Mode in which counter-irritants act—Sympathetic conveyance of irritation—Stimulating treatment of ophthalmia, sore-throats, and gonorrhœa—Mode in which galvanism and acupuncture act—Best mode of blistering—Spontaneous hæmorrhage—Critical discharges—Supposed incompatibility of two contemporaneous irritations—Uroscopists and urosmancers—Medical chamber-pots—Coction.

(1.) *Errhines.*—These medicines are used in diseases of the cerebrum, the eyes, the nose, the gums, and the mucous membranes about those parts. They act by what is called revulsion; though Hippocrates thought it was by relieving the brain of phlegm. They are dangerous in apoplexy, epilepsy, hæmorrhage, and aneurism. The principal of them are, nicotiana tabacum, veratrum album, asarum Europæum, lavandula vera, euphorbia officinarum, mentha (pulegium, vera, and piperita), salvia officinalis, momordica elaterium, hysopus officinalis, marubium vulgare, melissa officinalis, origanum (vulgare and majorana), rosmarinus officinalis, teucrium (marum and Chamæpitys), iris florentina, and saccharum officinarum. Dr. Duncan says that looking at the sun acts as a very good errhine.

(2.) *Sialagogues.*—These are either local in their application, as all condiments and essential oils, or general, as nitric acid, hydrocyanic acid, mercury,

gold, antimony, and all medicines which produce ptyalism. To the former class belong—piper nigrum, capsicum annuum, nicotiana tabacum, citrus aurantium, cochlearia armoracia, pistacia leutiscus, polygala senega, pterocarpus draco, myrtus pimenta, eugenia caryophillata, angelica archangelica, anthemis pyrethrum, laurus cassia, myristica moschata, and daphne mezereon. Sialagogues are used in diseases of the ears, the eyes, and especially of the gums.

(3.) *Demulcents.*—Demulcents increase the follicular secretions, are bland, and are used in the beginning of diseases. Expectorants, on the contrary, increase the perspirable secretions, are acrid, and are used at the end of diseases. Purgatives may be divided in the same way; some (the oils and sulphur for instance) being demulcents, while others (as the resins) are expectorant, aud produce watery stools. Demulcents are divided into four classes:—1. Mucilaginous demulcents, as the gums and mallows. The principal are malva sylvestris, althæa officinalis (from which is prepared the mistura mucilaginosa of the Edinburgh Infirmary), linum usitatissimum, glychirriza glabra, pyrus cydonia, prunus domestica daucus carota, inula helenium, tussilago farfara, anchusa tinctoria, marrubium vulgare, ficus carica, acacia vera, and astragalus tragacanthus. 2. Oleaginous demulcents; are olea Europœa, amygdalus communis, cocos butyracea, adeps suillus, adeps ovillus, cetaceum, and cera. 3. Gelatinous demulcents; as isinglass, calf's-foot jelly, Iceland and Irish moss, and cornu cervi. These demulcents are said, by Duncan, to contain pectic acid. 4. Farinaceous demulcents; as avena sativa, triticum hybernum, and hordeum distichum.

(4.) *Expectorants*—The principal of these are antimony, ipecacuanha, all the balsams, most of the turpentines, and many of the gum-resins. Storax, benzoin, balsam of Peru, and balsam of Tolu, are the only four balsams in the pharmacopœia. Besides those we have mentioned, the expectorants comprehend squill (scilla maritima), seneka, or rattlesnake root (polygala senega), uva ursi, amygdalus Persica (peach leaves), assafœtida, sagapenum, ammoniacum, acetic acid, oxymel, all acescent fruits, asarum, lichen Islandicus, Irish moss, melissa officinalis (balm), mentha sativa, or viridis (common mint, or spearmint), mentha pulegium (pennyroyal), salvia officinalis (sage), marrubium vulgare (horehound), hyssopus officinalis, datura stramonium (thorn-apple), bubon galbanum, copaifera officinalis (copaiba), myrrh, balm of Gilead (amyris), alcohol, æther, benzoic acid, ammonia, and its carbonate, volatile oils, tar, steam, and tobacco-smoke.

(5.) *Emetics.*—The sulphates of zinc and copper, the preparations of antimony, squill, and digitalis purpurea, are the chief of this class. According to Dr. Graham, the indigenous emetics are the seeds of the white-mustard (sinapis alba), the common violet (viola odorata) horseradish (the root of the cochlearia amoracia), chamomile-flowers (anthemis nobilis), the ranunculacæ, asarum, and arum maculatum (wake robin), common mustard (sinapis nigra), tobacco (nicotana tabacum), and carbonate of ammonia may also be mentioned among the emetics.

(6.) *Purgatives.*—These may be divided into three orders:—1. Laxative; as cassia fistula (the pulp of its fruit), tamarindus Indica (the common tamarind), the fig (ficus carica), the prune (prunus domestica), fraxinus ornus (the ash-tree from which manna is obtained), morus niger (the mulberry), grapes and resins (from the vitis vinifera), sulphur, molasses, or treacle, honey and calomel. 2. Cathartic; as jalap and scammony (convolvulus jalapa and scammonia), castor-oil (ricinus communis), rhubarb (rheum), and the five following, which are given in ounce doses;—sulphate of magnesia (Epsom salt), sulphate of Soda (Glauber's salt), phosphate of soda (tasteless purging salt), tartrate of potash (soluble tartar), and tartrate of potash and soda (tartarized soda, or Rochelle salt). 3. Drastic; as gamboge, elaterium (extracted from the wild cucumber, momordica elaterium), scammony, croton oil (croton tiglium), and cucumis colocynthis (colocynth, or bitter-apple.) Besides those we have enumerated, we may mention among the purgatives, the pulp of the fruit of dog-rose (rosa canina), sinapis alba, viola odorata, elder-berries (sambucus nigra), dandelion root (leontodon taraxacum), saccharum officinarun (sugar), olea Europœa (olive oil), pinus sylvestris (oil of turpentine), pistacia terebinthus (Chian turpentine), amyris Gileadensis, copaifera officinalis, euphorbium (euphorbia officinarum), Venice turpentine (pinus larix), Canadian turpentine (pinus balsamea), catharticum (purging-flax), rhammus catharticus (buckthorn), senna leaves (cassia senna), broom-tops (spartium scoparium), Geoffroya inermis (cabbage-tree bark), arctium lappa (burdock), menyanthes

trifoliata (buckbean), spigelia marilandia (Carolina pink), gratiola officinalis (hedge hyssop), aspidium filix mas (male fern), helleborus niger (Christmas rose), helleborus fœtidus (bear's-foot), colchicum autumnale (meadow-saffron), veratrum album (white hellebore), rosa centifolia (damask rose), rumex aquaticus (water-dock), magnesia and its carbonate, sulphate of potash, cream of tartar (supertartrate of potash), common salt (muriate of soda or chloride of sodium), and blue pill (pilulæ hydrargyri). Saline purgatives act on the upper part of the intestinal canal; resinous purgatives, and sulphur, on the lower. Colocynth acts on the whole canal. Elaterium, gamboge, cream of tartar, and Epsom salt, produce liquid stools.

(7.) *Carminatives.*—These medicines derive their name from *carmen*, a charm, on account of their prompt operation. They are principally furnished by the cruciferæ, labiatæ, and umbelliferæ. The chief of them are fennel and dill-seeds (anethum fœniculum and graveolens), angelica root, carraway seeds (carum carui), coriander seeds (coriandrum sativum), cummin seeds (cuminum cyminum), the seeds of the carrot (daucus carota), anise seeds (pimpinella anisum), common hyssop (hyssopus officinalis), lavender flowers (lavendula spica), melissa officinalis, mint, pennyroyal, peppermint (mentha piperita), common and sweet marjorum (origanum vulgare and majorana), sage, and rosemary (rosmarinus officinalis.)

(8.) *Diuretics.*—These are taken from all the three kingdoms. The animal kingdom furnishes the Spanish fly (cantharis vesicatoria). Alcohol and the spirit of nitrous æther, are the most powerful of the inorganic diuretics; and to them may be added, diluted mineral acids, muriate of iron, corrosive sublimate, blue pill, tartar emetic (antimonii tartras), the carbonate, bicarbonate, acetate, tartrate, and supertartrate of potash, sal polychrest (sodæ et potassæ tartras), nitrate, chlorate, hydrosulphuret, and ferrocyonate of potash, subborate of soda (common borax), and muriate of baryta. The vegetable diurtics are, squill, colchicum, fox-glove (digitalis purpurea), tobacco (nicotiana tabacum), lactuca virosa (strong scented lettuce), leontodon taraxicum, gratiola officinalis, volatile oil of turpentine, and of juniper (juniperus communis), copaiba, gamboge, broom-tops, and cajeput oil (melaleuca leucadendron).

(9.) *Emmenagogues.*—All tonics, antispasmodics, and purgatives are emmenagogues. To these may be added various kinds of exercise; such as dancing, and riding on horseback, hip-baths, electricity and sexual intercourse. The plants which have enjoyed the greatest celebrity as emmenagogues, are juniperus sabina (savine), crocus sativus (saffron), black hellebore, rubia tinctorum (madder), ruta graveolens (rue), sinapis alba, valeriana officinalis, artemisia absinthum, tanacetum vulgare (tansy), aristolochia serpentaria (Virginian snake-root), canella alba, and aloes socotorina. The two latter form hiera picra (pulvis aloes cum canella), which has been much celebrated as an emmenagogue. We may add gamboge and the fetid gums; and especially the spurred rye (secale cornutum.)

(10.) *Diaphoretics.*—This class of medicines is much used in rheumatism, diabetes, and diseases of the skin. After the administration of diaphoretics, a hot regimen is to be prescribed; while a cold one is to be employed when diuretics are taken. The best diaphoretic is warm water, and it assists the action of the rest. In the list of the latter are antimony, mercury, alcohol, the salts of ammonia, volatile oils, sulphuric and nitric æther, wine, musk, castor, camphor, laurus comphora; bay-leaves and berries, laurus nobilis, mezereon or spurge-olives, daphne mezereum; virginian snake-root; cascarilla-bark, croton cascarilla; contrayerva root, dorstenia contrayerva; sarsaparilla, similax sarsaparilla; sweet-flag, acorus calamus; guiacum officinale; ruta graveolens; sinapis nigra; opium; polygala senega; copaifera officinalis; sambucus nigra; cephaelis ipecacuanha; valerian, valerian officinalis or sylvestris; elecampane, inula helenium; leopard's bane, arnica montana; arctium lappa; rhododendron chrysanthum, yellow-leaved rhododendron; cayenne pepper, capsicum annuum; night-shade, solanum dulcamara; hyssopus officinalis; melissa officinalis; mentha pulegium; rosmarinus officinalis; salvia officinalis; sassafras, laurus sassafras; Dover's powder and James's powder. Dover's powder consists of eight parts of sulphate of potash, one part of ipecacuanha, and one of opium. James's powder consists of equal parts of peroxide of antimony, and persulphate of lime. Diaphoretics are very uncertain medicines. Their action is much assisted by combination, and, if the patient be fat, by venesection.

(11.) *Epispastics.*—This class may be subdivided into four others; rubefacientia, vesicatoria, suppurantia, and caustica.

1. The rubefaciants include rectified spirit of wine, æther, ammonia, stavesacre (delphinium staphisagria), butter-cups (ranunculus acris), ruta graveolens, guaiac (guaiacum officinale), sinapis alba, cochlearia armoracia, amyris elemifera, cajeput oil, oil of cloves, (eugenia caryphillata), galbanum, sagapenum, ammoniacum, opoponax gum (pastinaca opoponax), pellitory of Spain (anthemis pyrethrum), capsicum annuum, cinnamom (laurus cinnamomum), sassafras, camphor, daphne mezereon, euphorbia gum (euphorbia officinarum), black and long pepper (piper nigrum and longum), Venice turpentine, savine oil, arum maculatum, ginger (gingiber officinale, and the onion and garlic (allium cepa and sativum). 2. Vesicatoria; such as cantharides, and strong acetic acid. If these two be combined, their action is immediate. Munro was the first to use boiling water for the purpose of raising an instantaneous blister. It is best done by pouring boiling water on a cloth in a basin, and then inverting the latter on the part which it is wished to vesicate. A bleb may be raised along the course of the sciatic nerve, by conducting along it the spout of a boiling tea-kettle, or by laying a train of gunpowder over it, and then firing it. 3. Tartar emetic ointment is an excellent example of the suppurantia. 4. Caustica may be subdivided into escharotics and caustics proper; the first of which act on diseased, and the latter on sound parts. The principal caustics are nitrate of silver, sulphuric, nitric, and muriatic acids, potash, lime, corrosive sublimate, sulphate and acetate of copper, and muriate of antimony. In applying muriate of antimony, its extent should be confined by plaster, while nitric acid should be guarded by wax.

(12.) *Revulsives.*—It was formerly thought that medicines produced revulsion by drawing the "peccant matter" from one part of the body to another more within the controul of the physican, and therefore evacuants were considered to be beneficial in proportion to the discharge they occasioned. But many revulsives produce no discharge at all, and in these cases a new irritation was said to be substituted for an old one; whence arose the term counter-irritation." We may have two thousand irritations, the ganglionic nerves (which convey irritation) being complete in themselves; but we cannot have two sensations, because the sensorium is one and indivisible. Counter-irritants or revulsives act by causing a new irritation, which is conveyed by sympathy to the diseased part; the inflammation of which (inflammation being *diminished* irritation) is relieved by this *increased* irritation. This is well seen in the treatment of ophthalmia, sore throat, and gonorrhœa, by stimulating collyria, gargles, and injections; and it is thus that galvanism and acupuncture cure inflammation. Blisters do most good when they are employed as rubefaciants, without producing any discharge at all.

It was observed, from the earliest periods in the history of medicine, that spontaneous discharges of blood, or of the various secreted fluids of the body, freqently attended the cessation of inflammation; and it was therefore to be expected that the earlier medical authors would speak of the remedies by which these discharges, whether of blood or of the various secretions, were promoted, under the general term of evacuants; and would ascribe the advantage derived from them to the depletion which they occasioned. It could not, however, be long concealed from observation, that equal benefit was sometimes derived, in inflammatory diseases, from remedies which produced no discharge; and it became necessary, therefore, to establish it as a law of the animal economy, that the constitution could not suffer from two preternatural irritations at the same time; and that thus, when a secondary irritation had been set up, the primary one had been alleviated or removed. At this time, it must be remembered, inflammation was supposed to consist, not in diminished but in increased irritation. It has, accordingly, been almost the uniform practice of medical men to refer the advantages derived from the remedies called revulsive, to one or other of the causes we have mentioned. Even in the present day it is not uncommon to find medical practitioners dwelling, with great emphasis, on the number of liquid stools caused by a purgative medicine, or on the quantity of discharge produced by a blister; as if the efficacy of the remedies were to be estimated by these circumstances. Still more frequently, on the other hand, do we observe them attributing the benefit to be derived from such remedies as do not produce any sensible discharge, either to their effecting new determinations of blood (which is only a modification of the evacuation doctrine), or to counter-irritations, or to the abstraction of stimuli, of some kind or other, from the part affected. It is my intention

to trace, as shortly as possible, the origin of the vague surmises above alluded to, and to assign my reasons for thinking that both these explanations of the beneficial action of the remedies in question should be exploded; the benefit of these remedies being due to the stimulus which they indirectly communicate to the inflamed vessels.

It is stated as a naked truth by Hippocrates, that all inflammatory diseases are capable of being resolved, either by a flow of blood or other fluids, or by a discharge from the bowels, the urinary bladder, or the skin; and it is highly probable that the observations of this fact, together with the remarkable changes which most of the natural excretions of the body undergo in inflammatory diseases, as well as the preternatural discharges which frequently take place, lead to the opinion that the observation of all this, gave rise to the celebrated humoral pathology, the doctrines of which still influence the reasonings and practice of modern physicians, more than they are willing to admit, or perhaps more than they are themselves conscious of. The changes which the natural excretions of the body undergo in inflammatory affections, are considerably more obvious, and therefore more immediately striking, than those effected in the solids. It is easy therefore to account for the minute attention which medical men, in former ages, were accustomed to pay, not only to the quantity but also to the quality of the stools, the urine, and the cutaneous exhalations, in forming their prognosis in inflammatory diseases. Esculapius is well known to have been branded by Aristophanes with the name of Σκιτοραγος; and it is familiar to everybody how fertile a theme has been furnished to modern satyrists by the descendents of Theophilus and Actuarius, the Uroscopists and Uromancers of former times; who, it must be confessed, with their graduated glass chamber-pots, and their subtle divisions and subdivisions of a fluid, of the real nature of which they were profoundly ignorant, into cremor, nubecula, enœorema, and hypostasis, were not quite unworthy of the sarcasms cast upon them. Nor was the regard which the ancient physicians paid to the cutaneous exhalations much less remarkable, or less susceptible of ridicule, for but little really useful was known about these exhalations before the discovery of the insensible perspiration by Sanctorius.

A minute attention to the urine and perspired fluids was in ancient times considered of importance in inflammatory diseases, because any change in these fluids was supposed to indicate the progress of the coction, and the consequent expulsion of the ὠμα, or morbid matters, upon the entrance of which into the body, such diseases were supposed to depend. An attention equally minute, at least, would of course be paid to the blood, to the supposed two kinds of bile, and to the phlegm, because by their immediate agency, this coction and expulsion were conceived to be effected. The occurrence of spontaneous hæmorrhages, as well as of diarrhœa, sedimentous urine, or a flow of sweat, in inflammatory diseases, was from the earliest times noticed as an almost certain forerunner of recovery; and a similar coincidence appeared frequently to occur also in the other fluids in question, which, unlike those previously named, were not among the natural excretions, but were formed, as was supposed, immediately from "the four elements," and constituted by their union the bulk of the body. Hence it was a very natural conclusion, that inflammation was excited by a superabundance in the affected parts of the body of one or other of these four fluids; and hence, also, appears to have arisen the celebrated ancient dogma, that the four kinds of inflammation then admitted (phlegmonous, erysipelatous, schirrhous, and leucophlegmatic) were caused by a preternatural influx of these fluids into the parts affected; each being severally despatched thither by the πυρ, the φυσις, the ἐνορμων, the πνευμα, or the chief moving spring of the body (by whatever name it was designated) on an expedition against the morbific matters abovementioned.

LECTURES ON SURGERY.

By John Hunter, F.R.S.

General Principles of Disease.

Strong susceptibilities of a constitution to take on diseased disposition and action, whether of the whole as such, or a local effect of a constitutional disease, (which last I call an act of the constitution,) only require the impression of the immediate cause for the disposition and action peculiar to these susceptibilities to take place. These immediate causes may not be the same in two constitutions, although both may have a strong susceptibility for the same action; for what will produce the

action in one constitution may not produce it in another. One constitution will require one immediate cause and another another though both constitutions may have a susceptibility for the disease. Two men equally susceptible may be exposed to the cause of ague: one may have the disease, the other not. It is exactly similar with the mind: two men may be naturally or constitutionally equally susceptible of anger, but each must have his immediate cause; what will bring forth action in one will have but little effect on the other, and *e contrario*. It is the same thing with every effect of the mind.

Most susceptibilities are so much of a specific nature in themselves that each susceptibility shall be brought into action, in nineteen people out of twenty, in one way, and probably in the twentieth it has been prevented by what produced it in the others. This accounts for the same diseased action in people arising from so many different causes, and also accounts why such disease, though having a specific mode of action, may be varied in the same person in different ways, still more in different people, and even often require different modes of cure.

This theory may be illustrated by every disease that takes on full specific action; whether a full constitutional action, as an ague, or a local one, as the gout. As an ague is a well-known and well-marked disease, this theory will of course be illustrated by this disease.

Every constitution has more or less susceptibility to fall into an aguish habit; but there must be in all an immediate cause to produce the disease. The immediate cause may be such as will make nineteen people out of twenty fall into aguish action; but many constitutions, though they have a susceptibility of falling into an aguish habit, yet when the immediate cause takes place, may have no disposition to take on the full action of that disease; by which means the constitution is teazed by what is called a badly formed ague. If the immediate cause be some local disease in the body, as diseased liver, spleen, &c., then the cure must be effected by the cure of the liver, &c.

This reasoning may be taken in another point of view. Suppose twenty people having different susceptibilities;—introduce something that shall endanger the constitutions of the whole number, and each shall take on the disease that he was at that time most susceptible of, whether ague, gout, or any other.

But often that which would become the immediate cause in those already susceptible of action, or already predisposed to it, by repetition or continuance becomes the predisposing cause in others not susceptible. If two men, one susceptible as only to want the immediate derangement, the other not at all susceptible of an ague, be sent into the fens of Lincolnshire, the first shall have an ague immediately, because he only required the immediate cause of it; the other, if he does not get the better of the climate by habit, shall become aguish in time, because the country will become both a predisposing and an immediate or exciting cause.

We may substitute for the disease of ague some other disease, and the whole of the above reasoning will be perfectly applicable. But where it is the nature of the disease to take on local action, as in gout, there must not only be a universal disposition for such disease, which is the original, but there must also be a local preference, or rather a local susceptibility superior to the rest; and when the immediate cause takes place, so as to form the disposition, that part takes on the whole action, which relieves the constitution of such disposition, except it should produce another constitutional effect by a vital part taking it up, by which means it would affect the whole constitution similarly to any of the affections of this vital part, where a diseased disposition is formed, but does not take on the regular type of the disease, or does not take on the full and complete action; as in the aguish disposition not having gone through the regular stages of the ague, or gout not having formed a regular fit.

In those diseases that become local, as gout, some attention is to be paid to the seat of action; for if a vital part takes it up, it must be much worse than when there is only a constitutional affection.

The qualities of periodicity and regularity in constitutional diseases, or the power of a constitutional affection to become local, are, I believe, but little understood.

Susceptibilities for dispositions and actions appear to me to be the same with what are usually understood by temperament. Temperament is the state of the body fitting it for the disposition or action it is then in, whether it is only a state of susceptibility, of disposition, or action. The action is always the best test of that state; but, although the action is the best test, yet there are some circumstances attending animals that either dispose them for, or are concomitant upon, such and

such susceptibilities; and from these circumstances we can say beforehand, although only in a general way, what are the most predominant susceptibilities for certain actions in this or that animal. We see that even colour in animals depends on a difference in their temperaments, or is concomitant with temperament; for animals with fair skin and hair are more susceptible of cold than the dark, as also of pain. This is well known in the army, where we find that the power of bearing violence committed on the body is in proportion to the darkness of the individual. Fair people are more irritable in their minds, more susceptible of anger, and probably of all other passions. Fair people are also more susceptible of certain diseases than dark, as of scrofula. This may arise from their not being able to bear the vicissitudes of climate; for it is in changeable climates, especially where there is cold, moisture, &c., that scrofula is most predominant. The irritable inflammation also is more common in the fair than the swarthy. As the fair are less able to resist cold than the dark, it might be supposed that the dark are less able to resist heat, therefore more ready to run into diseases which warmth has a tendency to bring on. But from the estimate made by Dr. Young in the Island of St. Vincent's, it would appear there is some reason to suppose the contrary; from which it would appear that the dark-coloured are rather fittter for all kinds of climates.

Of diseased Disposition.—Dispositions are natural or unnatural, including diseased. The natural belong to the healthy animal, therefore are not to our present purpose.

Dispositions may be unnatural (and of course the actions arising from them unnatural,) and yet not diseased.

Unnatural dispositions and actions we shall divide into three kinds, or they may arise from three causes, which are remote.

1st. The disposition of restoration, in consequence of some injury done, which is also a consequence of every disease which is curable.

2nd. The disposition arising from necessity, as the thickening of parts from pressure, ulceration of every kind. This includes a great variety.

3rd. Diseased dispositions of all kinds, which also includes a vast variety.

From this division we see that there are two preternatural dispositions that are not diseased, so much so that the first may be reckoned a disposition of health; therefore there is but one preternatural disposition to action which can be called diseased, namely, the disposition to destruction, and which is to be cured by substituting the first disposition.

Diseased dispositions may arise from fault in the animal powers themselves, or some extraneous matter in the constitution or circulation, as in the case of many poisons, or from many substances acting on the stomach called poisons, or from some substances being applied externally to the body which disagree with animal life in general, as too much cold, to much heat, &c.

Every diseased disposition most probably has its allotted time for action after the impression, or after the formation of the disposition. This is remarkably the case in specific diseases; but yet this will differ according to the susceptibility. The same with poisons: the small-pox is about six, seven, or eight days at a medium; the measles the same. The venereal disease has a medium, although it varies. But some specific diseases shall remain a considerable time before the action takes place; and this will be much longer in some than in others, according to the nature of the diseased disposition and parts. In cancer it is often very tedious. I have seen instances where it was years after all continuance of the cause was removed, before the glands in the armpit had taken on diseased action after contamination.

A girl at St. George's Hospital, fourteen years of age, born in the West Indies, left that part of the world when ten years of age. About a twelvemonth ago she had an eruption on the skin in several parts of the body, especially on the face, arms, and hands. The eruption arose like warts, or like large moles, about the size of half a crown piece, above the surface of the skin, irregular in their base, some standing single, others running into one another, of a browner colour than the common skin, which was clear and of a firmer texture.

Now this was a West Indian disease; therefore I say that the girl was contaminated in the West Indies. The impression was made there which was the first cause, and the disposition was formed; but the disposition did not come into action for three years after. The removal to a cold climate, though it could not remove the disposition or prevent its effects, yet protracted them.

It may be further remarked, in specific diseases and in poisons, that if the specific

disease or poison is such as is capable of contaminating different parts, whose powers or readiness to act is different, the same disease will show itself at different intervals in these places in the same person, though perhaps every part is contaminated at the same time. Thus we have the venereal disease appearing in different parts at different intervals in the same person, arising from the natural susceptibility for action in some parts being greater than in others. The skin and tonsils being most susceptible of contamination, as also of action, are therefore affected soonest; the bones and tendons less so, and are therefore later in taking on the action. The disposition simply does not seem to affect either the constitution or the part, for either shall go on well with all their natural functions, and powers of restoration when injured or affected with diseases of every other kind, although at the same time in the disposition of some other disease.

Dispositions of one kind may be restored after being destroyed for a time by a more powerful impression, or such as the constitution is more susceptible of, which shall supersede the first disposition, and go on with its actions; and when its action is completed, the first disposition shall again take place, as will be illustrated when we come to talk of actions simply.

Action.—I have explained that a disease is a disposition for a wrong action, and that the action is the immediate effect of the disposition, and that either the actions, or the effects of those actions, produce the symptoms which are generally called the disease, such as sensations, which are commonly pain of all kinds, sickness, alteration visible or invisible in the structure of the part or parts that act, and sympathy.

The animal, or part disposed to act, generally takes on action, which is of three kinds: natural, restorative when injured, and the diseased; each arising from the corresponding class of dispositions, and therefore divisible into the same.

The actions of health arise from a disposition to act properly, that is, according to the combined laws of the machine, which may be either universal or only partial; for a man may be wholly in health, or only so in part. The actions of restoration are for the falling back into the above natural actions, and which will be according to the nature of the injury done and the parts combined. The diseased actions are many, but may be ranked under the following heads:

1st. Improper actions of natural parts, as spasms of muscles; irregularity in the times of action of a compound part. The nerves have the credit of being the remote cause of all these.

2nd. Unnatural or improper actions of the vessels; and these may be either attended with an increased or diminished action.

The ultimate and visible effect of disease is action; but this is not the disease, for the action is only an effect, a sign, or symptom of disease. But the disposition being only discovered by its effects, we are apt to go no further in our inquiry, the cause being to many only an object of curiosity. However the effect must be attended to, for it is this which leads us to the cause. These actions may arise from poisons, or substances improperly applied to the surface; from cold; from substances taken into the stomach: these usually give a sensation to the animal, so that it can judge that the parts are diseased. But sometimes the action is too slow to give an alarm to the part; or the disease is felt through the irritation; or by a part remote from the diseased part sympathizing, as worms in the intestines, producing convulsions, an itching at the nose, &c. When the hip or loins are affected, the sympathising part, before the disease is felt in the original seat, is the knee. Passing a bougie has caused sickness before it was felt in the urethra, as has a clyster before the rectum was sensible of any inconvenience.

Often the internal feeling of health is the forerunner of disease. People just before a disease shall be in better spirits, and feel strong, so as to take notice of it themselves.

A gentleman had better health before a spitting of blood came on.

A boy had more spirits than usual the night before he was attacked with the cold fit of fever.

Perhaps the cause of disease gives the first feeling of health or vigour; the animal powers are called up on the first alarm of the disease; and when they sink, which is the second stage, they produce cold, or shivering, which is generally supposed to be the first symptom. In children I have often observed that the smell is affected before diseases. The first impression here is made on the olfactory nerves.

Some diseases come on extremely rapidly, producing at first very violent

symptoms, called acute; others come on slowly, and do not produce any sensible first symptom.

I have already observed, that all the actions in a healthy state are only produced by their proper stimulus; but sometimes we have actions without proper stimulus, which are diseased actions. In all organs I have observed there is a regular succession of action, as in the secretion of different substances, according to the wants of the parts which become the stimuli; but they may perform this office without the stimulus. The vessels are very active parts, and have often wrong actions, producing diseases in a great variety of parts, and are peculiarly active in the operations of disease.

Too great action will produce disease, according to circumstances. As the powers are equal, or greater, the action is universal or local: if universal, as in inflammatory fever, it will either produce resolution or death; if local, as in inflammation, either resolution or suppuration; or if the action is greater than the power, irritability; or it may keep up a constant inflammation; or if very violent, produce mortification. Too great action will often in the end, produce too little action; but not often *vice versa*. General action, or fever, may produce local, as inflammation; or local will produce general, as fever. They often attend one another from accident, and then they generally increase one another.

Too little action arises from a disposition to act within the necessary bounds of health, which produces real weakness and a bad state of health, with debility, without any visible state of disease, as we often see in fine ladies. If the part debilitated be not necessary to life, it only produces its effects on that organ. Too little action may subject the person to many more diseases than what the active are subject to. Even the habit of indolence in the mind, joined with inactivity of the voluntary actions, which is generally produced from an indolent state of the mind, produces the same effects, especially as we see in women. So that weakness is attendant on many diseases, and although somewhat necessary to many, yet it is not actually the disease itself. For instance, weakness attends the scurvy, and is necessary before the full effects of the specific disposition, namely, the action, can take place. The same in locked jaw. scrofula, &c. Weakness becomes one of the causes of irritability, as will be explained. Weakness, too, produces an increase of the disease. It may be local or universal, for many parts of an animal body may be weak, while others are strong; and if the weak parts are not essential to life, then the effect is only debility in performing the function, and the vital parts may not suffer. If the nerves are weak, the voluntary parts suffer; if the stomach, then the whole will suffer, or there may be a weakness which includes the whole without destroying it. It sometimes seems that the suspension of action for a time, increases the power afterwards; and lessening the power of action, increases the real strength at other times.

All diseased actions are simple.—A disposition of one kind may and shall exist in a part or whole, while an action of another kind is going on; and when the action ceases, the disposition, or dormant action, if we may be allowed to call it so, shall then come into action.

There are certain natural actions arising in an animal body in consequence of every irritation, whether appearing as a spontaneous injury or from accident. These common accidents I shall illustrate by inflammation.

Inflammation, then, is one of these simple actions; but we find inflammation may be joined by a specific quality which shall not alter its apparent mode of action, yet shall cause its ultimate effect to vary; thus, though the mode of action *is* altered the action itself is not altered.

It appears to me that every disposition must be simple, and therefore be only capable of producing a simple action. Parts so disposed may be irritated by something that alters the disposition. If the old disposition be destroyed, a new one must be produced; but if the disposition be only altered in part, there may be the two dispositions in the same part, the old in part and the new in part. But it is possible that a new disposition may be formed out of the two, different from either of the two which formed it; still it must be considered as a simple disposition.

This is plain in the cure of the venereal disease; a third disposition, namely, the healthy, arises out of the two, that of the disease, and that of the remedy. This is likewise shown in the action of Dover's powder, for neither vomiting nor sleep is produced, but a third action, namely, sweating.

But a constitution or part may have equally a susceptibility of a variety of diseases, as venereal, scrofula, &c.,

some of which may have a common cause, others a specific, as lues; yet the constitution can have, at the same time, only one specific action. As there are susceptibilities for dispositions, so there must be also dispositions for actions; yet two of these cannot exist at the same time in the same part or constitution.

Two children were inoculated for the small pox. Their arms were inflamed; but about the third or fourth day from the inoculation symptoms of fever arose, and the measles appeared, and went through their progress as usual. During this time the inflammation in the arm was arrested, but when the measles were completely gone, the smallpox took place, and went through its progress.

Here a disposition for the meales had taken hold of the body, but although it had done that previously to the smallpox, yet it was not in such a way as stopped the progress of the smallpox. The smallpox matter was capable of contaminating, and produced inflammation, which went to a certain length, but the moment the measles changed their disposition into action, as the two actions could not go on together, the action of the smallpox was suspended till the measles had gone through its action, and the moment the constitution got free of this, the smallpox began to act again.

A lady of rank was inoculated by Mr. Sutton. A few days after a fever came on, of the languid or putrid kind, but without any eruption, except a few petechiæ on the breast; she went through the process of a low fever, and afterwards the smallpox commenced; yet when the pustules maturated they spread wide and were very large; also a different set of eruptions succeeded, so that thirty days passed before the skin was clear of the eruptions.

These cases show that but one mode of action can take place at the same time; yet I could conceive that two actions might produce a third one, which might have been a new poison, as the last case in some measure seems to show.

Of wrong actions.—I have already mentioned, under the animal œconomy, the two different kinds of action in an animal:—1st. The natural powers of growth, modelling, &c.; 2nd. The powers peculiar to each part, voluntary or involuntary. Now, the first may act improperly; it may push forth unnatural and unnecessary growth in some parts, and too little in other parts. They may also act in such a manner as to obstruct the necessary actions of the machine, as by unnecessary masses called tumours, increase of the bones, &c. The second may also act wrong, that is, may act without the necessity for action, as in spasms, locked jaw, over secretions, palpitations of the heart, &c. This is in every respect similar to the former, only the improper action is on a different part. If, then, improper actions fall on a part of importance to the machine, they produce disease; or they may act too little, and thus produce diseases of a different kind.

Diseased actions, like the actions of health, become accustomed to impressions, and we see many of them subject to the same laws. This is of two kinds,—first, where the diseased part becomes less and less affected by stimulus, from a continuance of the application; second, where the whole body, or a part, becomes more easily affected by the stimulus, from a repetition of the application.

People constantly exposed to the cause of certain diseases become less affected, or less liable to be affected. Perhaps the best way to prevent being affected by some infectious diseases would be to live constantly where the infection was. People coming out of the country into the town are more liable to be infected by certain infections, as the smallpox, than those who live constantly in large towns. The constitution having once felt the stimulus of the smallpox, is not afterwards affected by it; yet I can readily conceive that if a man were to live two hnndred years he might arrive at that period when he would again be susceptible of the impression.

THE ANATOMIST.

ARTERIES.

THE AORTA,

Is divided into three portions, viz., the arch of the aorta, the thoracic aorta, and the abdominal aorta.

THE ARCH OF THE AORTA,

Sends off five branches.

A. *Arteria coronaria dextra,* which sends a branch to the right auricle, a branch to the anterior part of the right ventricle, and a branch to the posterior part of the right ventricle.

B. *Arteria coronaria sinistra,* which sends a branch to the left auricle and a branch to the left ventricle.

C. *Arteria innominata*, which divides into the right carotid and right subclavian arteries.

D. *Left carotid artery.*

E. *Left subclavian artery.*

THE COMMON CAROTIDS

Divide into two branches.

A. *External carotid artery.*

B. *Internal carotid artery.*

THE EXTERNAL CAROTID

sends off ten branches, viz.—

A. *Superior thyroid*, which sends off 1st, a hyoidean branch; 2nd, a superficial branch; 3rd, a laryngeal branch; and 4th, a thyroidean branch.

B. *Lingual*, which sends off, 1st, a hyoidean branch; 2nd, the dorsalis linguæ artery; 3rd, the sublingual artery; and 4th, the ranine artery.

C. *Facial*, which sends off, 1st, the inferior palatine; 2nd, the tonsillar; 3rd, the glandular; 4th, the submental; 5th, the inferior labial; 6th, the inferior coronary; 7th, masseteric; 8th, superior coronary; 9th, the lateral nasal; and 10th, the angular.

D. *Muscular.*

E. *Occipital*, which gives off the cervicalis descendens, the inferior meningeal, and the superficial.

F. *Posterior auris*, which gives off the muscular, the glandular, and the stylo-mastoid.

G. *Ascending pharyngeal*, which gives off the pharyngeal branches, and the meningeal branches.

H. *Transverse facial.*

I. *Superficial temporal*, which gives off, 1st, the anterior auris; 2nd, the capsular branches; 3rd, the middle temporal; 4th, the posterior temporal; and 5th, the anterior temporal.

K. *Internal maxillary*, which gives off 1st, the meningea media; 2nd, the inferior maxillary; 3rd, the pterigoid; 4th, the deep temporal; 5th, the masseteric; 6th, the buccal; 7th, the dental; 8th, the infra-orbital; 9th, the descending palatine; and 10th, the nasal.

THE INTERNAL CAROTID

sends off five branches.

A. *Arteriæ tympani.*

B. *Arteriæ receptaculi.*

C. *Ophthalmic artery*, which sends off, 1st, the lachrymal; 2nd, the centralis retinæ; 3rd, the supra-orbital; 4th, the ciliary branches; 5th, the muscular; 6th, the posterior ethmoidal; 7th, the anterior ethmoidal; 8th, the palpebral; 9th, the nasal; and 10th, the frontal.

D. *Posterior communicating artery.*

E. *Anterior cerebral*, which sends off, 1st, the anterior communicans; 2nd, the arteria corporis callosi; and 3rd, the middle cerebral, which furnishes the arteria choroidea.

THE SUBCLAVIAN ARTERY

sends off five branches.

A. *Vertebral*, which gives off, 1st, the arteriæ medullæ spinalis transversæ; 2nd, the meningeal; 3rd, the inferior cerebellar; 4th, the arteriæ medullæ spinalis; and 5th, the arteria basilaris; from this artery arises the superior cerebellar artery, and the posterior cerebral, two in number.

B. *Internal mammary* which gives off 1st, the anterior intercostal; 2nd, the mediastinal; 3rd, the comes nervi phrenici; 4th, the musculo-phrenic; and 5th, the superior epigastric.

C. *Thyroid axis*, which gives off, 1st, the inferior thyroid; 2nd, the cervicalis ascendens; 3rd, the supra-scapular; from which arises the superior acromial, the supra-spinal, and the infra-spinal: 4th, the posterior scapularis, which gives off the glandular, the superficial cervical, and the posterior scapular.

D. *Cervicalis profunda.*

E. *Superior intercostal.*

THE AXILLARY ARTERY

sends off seven branches.

A. *Acromial thoracic.*

B. *Thoracica suprema.*

C. *Thoracica alaris.*

D. *External mammary.*

E. *Subscapula*, which sends off an anterior and a posterior branch.

F. *Posterior circumflex.*

G. *Anterior circumflex.*

THE BRACHIAL ARTERY

sends off four branches.

A. *Profunda superior*, which sends off, 1st, an ascending branch; and 2nd, the musculo-spiral branch.

B. *Nutritia humeri.*

C. *Profunda inferior.*

D. *Anastomotica magna.*

THE RADIAL ARTERY

sends off ten branches.

A. *Recurrent radial.*

B. *Muscular.*

C. *Superficialis volæ.*

D. *Anterior carpi radialis.*

E. *Dorsalis carpi radialis.*

F. *Dorsalis pollicis.*
G. *Dorsalis indicis.*
H. *Princeps pollicis.*
I. *Radialis indicis.*
K. *Palmaris profunda.*

THE ULNAR ARTERY

sends off eight branches.

A. *Anterior recurrent.*
B. *Posterior recurrent.*
C. *Interosseous,* which sends off, 1st, the anterior recurrent; 2nd, the anterior interosseous; 3rd, the posterior interosseous; 4th, the posterior recurrent; and 5th, the posterior descending branch.
D. *Muscular.*
E. *Carpi ulnaris anterior.*
F. *Ulnaris posterior.*
G. *Arteria communicans.*
H. *Palmaris superficialis.*

PALMAR ARCHES.

The deep palmar arch is formed by the palmaris profunda of the radial, uniting with the arteria communicans from the ulnar; it sends off five small branches to supply the interossei muscles.

THE SUPERFICIAL PALMAR ARCH

is formed by the arteria palmaris of the ulnar, uniting with the superficialis volæ from the radial. It sends off four branches.

A. *Branches to ulnar edge of little finger.*
B. *Branch to cleft between little and ring fingers.*
C. *Branch to cleft between ring and middle fingers.*
D. *Branch to cleft between middle and index fingers.*

THE THORACIC AORTA

sends off five sets of branches.

A. *Pericardiac.*
B. *Mediastinal.*
C. *Bronchial.*
D. *Œsophageal.*
E. *Intercostals,* each divides into, 1st, the posterior branches; and 2nd, the anterior branches.

THE AORTA ABDOMINALIS

sends off the following branches:—

A. *The two phrenic arteries.*
B. *The cæliac axis.* From this axis arise—1st, the superior gastric artery, which divides into a superior and an inferior branch; 2nd, the hepatic artery, which gives off the superior pyloric artery, the gastro-duodenal artery, which divides into the arteria pancreatica duodenalis, and the arteria gastro-epiploica dextra The hepatic artery then divides into the left hepatic and right hepatic arteries, from the last of which proceeds a small branch to the gall-bladder, called arteria cystica; 3rd, the splenic artery, which sends off the pancreaticæ parvæ, the pancreatica magna, the vasa brevia, splenic branches, and the gastro-epiploica sinistra.
C. *The superior mesenteric artery,* which gives off, 1st, the colica dextra, which divides into a superior and an inferior branch; 2nd, the colica media, which divides into a right and left branch; 3rd, the ileo-colica, which divides into a superior branch, a middle branch, and an inferior branch, and, lastly, the mesenteric branches, from fifteen to twenty in number.
D. *Two capsular.*
E. *Two renal.*
F. *Two spermatic.*
G. *Inferior mesenteric,* which send off, 1st, the colica sinistra, which divides into an ascending branch and a descending branch; 2nd, the sigmoid artery, and 3rd, the superior hæmorrhoidal artery.
H. *Uureteric arteries.*
G. *Lumbar arteries.*
K. *Sacra media.*

THE COMMON ILIAC ARTERIES

divide into two branches, viz.,
The internal and
External iliac arteries.

THE INTERNAL ILIAC ARTERY

sends off eleven branches in the female.

A. *Arteria ilio-lumbalis,* which sends off, 1st, ascending branches; 2nd, external branches; and 3rd, descending branches.
B. *Sacra-lateral sacral.*
C. *Middle hæmorrhoidal.*
D. *Vesical.*
E. *Umbilical.*
F. *Uterine.*
G. *Vaginal.*
H. *Obturator,* which sends off, 1st, the branches within the pelvis; and 2nd, branches without the pelvis.
I. *Gluteal,* which sends off, 1st, a superficial branch; and 2nd, a deep branch.
K. *Ischiatic,* which sends off, 1st, the coccygæal branch; 2nd, the arteria comes nervi ischiatici; and 3rd, the muscular branches.
L. *Pudic,* which sends off, 1st, the externa hemorrhoidal arteries; 2nd, the perinæal; 3rd, the transversalis perinei; 4th, the arteria corporis bulbosi, which gives a branch to Cowper's gland, and a

branch to the corpus spongiosum; 5th, the arteria corporis cavernosi penis; and 6th, arteria dorsalis penis.

THE EXTERNAL ILIAC

sends off two branches.

A. *Epigastric*, which sends off, 1st, the spermatic artery; and 2nd, the muscular artery.

B. *Circumflexa ilii.*

THE FEMORAL ARTERY

sends off the following branches.

A. *Superficial epigastric.*

B. *Pudendæ superficialis.*

C. *Circumflexa ilii superficialis.*

D. *Profunda femoris*, which sends off 1st, the circumflexa externa, from which arise the ascending branches, the circumflex branches, and descending branches; 2nd, the circumflexa interna, from which arise arterial branches to the muscles of the hip joint, and a branch to the interior of the hip joint; 3rd, the arteria perforans prima; 4th, the perforans secunda; 5th, the perforans tertia: and 6th, anastomotica magna.

THE POPLITEAL ARTERY

sends off seven branches.

A. *Superior muscular.*

B. *Articularis superior externa*, which sends off a superficial branch, and a deep branch.

C. *Articularis superior interna*, which sends off a superficial branch, and a deep branch.

D. *Azygos branch.*

E. *Articularis inferior externa.*

F. *Articularis inferior interna.*

G. *Inferior mascular.*

HISTORICAL ACCOUNT OF THE INTRODUCTION OF TOBACCO INTO ENGLAND.

By T. S. C. S. P.

In offering the following little compilation to public notice, the Editor presumes his labour will not be considered useless, when he avows his object to be a desire to communicate information and afford amusement to those who indulge in a habit of almost universal prevalence. It is a matter of surprise that the use of tobacco, in the short period of 300 years, should have become general over the entire habitable globe, comprehending all classes of people, from the savage to the most refined. Being introduced into England in an age of great men, and rendered fashionable by one of the most accomplished of that or any other age, it was, for a long time, considered an elegance and a mark of good breeding; while the means taken to suppress its use had a contrary effect, and it became so generally diffused, that it is now equally the comfort of the labourer and the artizan, as the elegant luxury of the peer and the prince, in fact, while the cottage and the palace acknowledge its cheering influence, the revenues of the kingdom are considerably enhanced by the increased consumption of it as an important article of commerce.

There is perhaps no article on which so much diversity of opinion has been expressed as this, philosophers, poets, kings, and physicians have written upon its use and abuse, the Editor, therefore, without entering into any controversy upon its merit or demerit, is free to declare that some of his happiest hours have been passed while enjoying the social pipe with a respected friend, and in moments of doubt and difficulty, his scattered ideas have been concentrated, by the refreshing and invigorating pungency of a *pinch* of snuff: he purposes, therefore, only to lay before the reader a general history of tobacco (collected from various sources, as the amusement of his leisure hours), accompanied by a few anecdotes connected with it; and in order that the information may be within the reach of the humblest of its devotees, it is published at a price, which would justify its purchase, even if used in lighting the pipes of those who may have been interested or amused by the perusal.

According to the best authorities tobacco was not know in Europe untill after the discovery of America by the Spaniards, at which time it was in general use among the natives, and was invariably used in their religious ceremonies, the priests having delivered pretended answers from the world of spirits, while under the influence of a peculiar intoxication produced by inhaling the smoke of tobacco, which thrown upon a fire lighted for that purpose. It is said by some writers, that the first time it was seen smoked as a luxury, was at a friendly interview between Grijalva, a Spaniard, and the cacique or chief of Tabasco, an island in the Gulf of Mexico, in 1518, from whence the herb took its name. While it is asserted by others, to have been derived from the is-

land of Tobago, discovered by Columbus in 1496, who thus named it after the pipe used by the islanders, in smoking the herb then termed *Kohiba;* the herb and pipe bore the same name at the other extremity of the Carib Archipelago, in St. Domingo. Be this as it may, it is certain that the Spaniards first introduced the use of tobacco into Europe.

The Chinese pretend to have been tobacco-smokers for many ages, but there is no reason to believe they were at all acquainted with the herb till procured by them from India, to which country the seeds of the plant were first taken by the Portuguese in the year 1599. But there is no doubt that the habit of smoking was known at a very early period, for in the Anthologia Hibernica, vol. i. p. 352, Dublin 1793, is a print of a *Dudeen*, viz. short stump of a pipe, which was found at Brannockstown, county Kildare, sticking between the teeth of a human skull. A memoir accompanies the print, in which we are told, on the authority of Herodotus, lib. i., sec. 36; Strabo, lib. vii. 296; Pomponius Mela, 2, and Solinus, c. 15, that the northern nations of Europe were acquainted with tobacco, or an herb of similar properties, and that they smoked it through small tubes—of course long before the existence of America was known.

It may therefore be fairly concluded that other substances were smoked by these nations, since all historians agree that America is the source from which this peculiar plant originally sprung.

In 1519, the Spanish General, Cotez, sent a present to his king, Charles, comprising a variety of commodites, as a specimen of the productions of the land he had conquered, among them was included a quantity of tobacco, which thus, for the first time, found its way into Europe, but it does not appear to have attracted much notice until several years after that period.

In 1561, Jean de Nicot, of Nismes, Lord of Villemain, then ambassador from Francis II. to the Court of Portugal, procured some seeds from a Dutchman, and sent them to his queen, Catherine de Medicis, who used it medicinally in the form of snuff. About the same time the Cardinal Santa Croce, the Pope's Nuncio, returning from his embassy at the Spanish and Portuguese courts, carried some of the plants with him to Rome The use of it became rapidly diffused over both France and the Papal States in the shape of snuff. But the practice of smoking it did not commence until some years afterwards. The French dignified it by a variety of names, as *Herbe de la Reine*, *Herbe de la Grande Prieur*, &c. But the generic name assigned to it by the celebrated Swedish naturalist, Linnæus, is *Nicotiana*, from the French ambassador before mentioned.

The universal habit of smoking, prevailing in the east, has induced many persons to imagine that, the use of this herb was known in Turkey and Persia before it was imported from America into Europe; but upon reference to works of an earlier date, in which oriental customs are described with great minuteness, no mention of it is to be found, neither is it noticed by old travellers in those countries, which would undoubtedly have been the case, had it then existed.

The Persians appear to have obtained it from India, whence it was supplied by the Portuguese, who had settlements in the Persian Gulf for nearly thirty years after they had introduced it into India; and whence also they imported large supplies after the expulsion of the Portuguese from those settlements; as appears from the following relation of Sir Thomas Herbert, in 1628, who being that year in Persia, says, "It seems that forty camels, entering Cashin, laden with tobacco out of India, the drivers being ignorant of a late prohibition, the king sometimes commanding and restraining, as reasons of state invited, Mamet-Ally-beg, the favourite, wanting his *Piscah*, i.e. present for his connivance, commanded the penalty to be executed, which was to crop their ears and snip their noses; offering withal to his angry justice, a dismal sacrifice of forty loads of tobacco, which were put into a deep hole which served as a pipe, and being inflamed, in a black vapour, gave the citizens *gratis*, for two whole days and nights, an unpleasing incense."

The Turks appear to have received it about the same time as the Persians, probably from the same source, or more immediately from Europe, by means of the Venetian and Genoese traders in the Levant, who began to find it a marketable commodity. Sandys, who was at Constantinople in 1610, speaking of it as a custom lately introduced, says:—"They also delight in tobacco. They take it through reeds that have joined unto them great heads of wood to contain it,—I doubt not but lately taught them, as brought them by the English; and were it not sometimes lookt into (for Morat Bassa not long since commanded a pipe to be thrust through the nose of a Turk,

and so to be led in derision through the city), no question but it would prove a principal commodity. Nevertheless, they will take it into corners, and are so ignorant therein, that that which in England is not saleable doth pass here among them for most excellent." This later remark is exceedingly curious when we consider the refinement introduced into the art of smoking by the orientals, and that the idea of the personal appearance of a Turk or Persian is inseparable from the appendage of a long pipe, which has now become indispensable to him.

The use of tobacco has been introduced wherever Europeans have found their way. In the Sandwich Islands, says Kotzebue, "tobacco is now so generally used, that young children learn to smoke before they walk, and grown-up people carry the practice to such an extent, that they have fallen down senseles, and often die in consequence."

Tobacco was transported soon after its discovery to the West Indies, where it has been extensively cultivated particularly in the Island of Cuba.

Hume says, "that tobacco was introduced into England by Sir Francis Drake's fleet on their return from the attack on the Spanish provinces in the West Indies in 1585," so says Camden, adding "it immediately began to grow into very general use, and to bear a high price; a great many persons, some for luxury, and others for their health, being wont to draw in the strong-smelling smoke with insatiable greediness through an earthenware tube, and then to puff it forth again through their nostrils: so that tabacca-taverns (tabernæ tabaccanæ) are now as generally kept in all our towns, as wine-houses or beer-houses." This last extract appears to confute the vulgar error that it was introduced by Sir Walter Raleigh, although there can be no doubt that Sir Walter's example contributed much towards its more general use, and he probably introduced a greater variety of the herb; Malcolm has preserved a tradition which existed in the Parish of St. Matthew, Friday street, that Sir Walter Raleigh used to sit at his door smoking with Sir Hugh Middleton in the reign of Elizabeth, he adds, "The custom was probably promoted, through the public manner in which it was exhibited, and the aromatic flavour inhaled by the passengers, exclusive of the singularity of the circumstance and the eminence of the parties. Indeed, the two last motives are alone adequate to establish a custom ten times more loathsome than King James describes tobacco-smoking to be."

It was known in England as a curiosity, before the time mentioned by Camden, but it is certain that Sir Walter Raleigh took great interest in the promotion of its cultivation and consumption in this country. He also introduced the culture of it in Ireland, on his estate at Yougal in the county of Cork; and it has since been cultivated to a large extent in various counties of that kingdom until it was restricted by certain legislative enactments for the protection of our colonial trade.

On the discovery of Virginia by Sir Walter Raleigh, Elizabeth consented to plant a colony thither, and tobacco began to be cultivated as the principal staple commodity; the following singular circumstance which occurred in the beginning of the 17th century, will give some idea of the value of the article. There being a scarcity of females in the colony, the Virginia company, which was established in 1606, sent out a number of respectable young women to supply the settlers with wives. These ladies were actually changed for 120 pounds of tobacco each, being the amount of the expenses of the voyage.

The cultivation of tobacco in Virginnia, is thus described by Mr. Thomas Glover, in 1676,

"In the Twelve days after Christmas they begin to sow their seeds in the beds of fine mould, when the plants be grown to the breadth of a shilling, they are fit to replant into the hills, for in their plantations they make small hills about 4 feet distant from each other, somewhat after the manner of our hop-grounds; these hills being prepared against the plants be grown to the fore-mentioned bigness, (which is about the beginning of May) they then in moist weather draw the plants out of the beds, and replant them in the hills, which afterwards they keep with diligent weedings. When the plant hath put out as many leaves as the ground will nourish to a substance and largeness as will render them merchantable, then they break off the top of the plant. If the ground be very rich, they let a plant put out a dozen or sixteen leaves before they top it; if mean, then not above nine or ten, and so, according to the strength of their soil; the top being taken off, the plant grows no higher, but afterwards it will put out suckers between their leaves, which they pluck away once a week, till the plant comes to perfection, which it

doth in August. Then in dry weather, when there is a little breeze of wind, they cut down what is ripe, letting it lie about four hours on the ground, till such time as the leaves, that stood jutting out, fall down to the stalk, then they carry it on their shoulders into their tobacco-houses, where other servants taking of it, drive into the stalk of each plant a peg, and as fast as they are pegged, they hang them up by the pegs on tobacco-sticks; so nigh each other that they just touch, much after the manner they hang herrings in Yarmouth: thus they let them hang five or six weeks, till such time as the stem in the middle of the leaf will snap in the bending of it; then, when the air hath so moistened the leave as that it may be handled without breaking, they strike it down, strip it off the stalk, bind it up in bundles, and pack it into hogsheads for use."

Doubless the mode of culture varies according to the soil and climate of the various countries whence it is raised, and also must be greatly improved since Mr. Glover wrote.

Mr. Strahan, in a paper on the culture of tobecco in Yeylan, 1702, Phil. Trans. vol, xxiii. describes what he considers the origin of the cigar, as follows:—

"The natives of Zeylan cultivate two sorts of tobacco, both of which they call *Dunkol*. The signification is a smoking leaf, for *Dun* is smoak, *Kol* a leaf, the one they call Hingele Dunkol, or Singele Dunkol, for they make no distinction of H and S; the other is called Dunkol Kapada, which word Kapada signifies zelding, and is derived from the Portuguese; which tobacco is very intoxicating, and much stronger than the former: it is the same plant, the difference is only that the Singalese tobacco has little attendance, while a great deal of pains is taken with the other until it be fit for use."

"The souldiers, who delight to smoke a big pipe full, and that frequently in one day, do smoak the common sort, some of the kapada among it; the Singalese, who smoke not so much at once, neither so frequently, do take a piece of kapada and roll it together, then roll a piece of dry leaf of the wattukan trees about this, and kindle it at one end and suck at the other, until it be consumed."

However, there is reason to believe, that the Spaniards and Portuguese both, smoked the leaf rolled up as a cigar soon after the discovery of the herb, in the first place from its portable nature and manifest convenience, and secondly because smoking it in that manner is the prevailing fashion in those countries at the present time.

The practice of smoking had become so universal in the year 1600, that in a note on the "Criminal Trials," vol. i. p. 361. it is stated that the French ambassador of that time in his dispatches, represented the peers, on the trials of the Earls of Essex and Southampton, as smoking tobacco copiously while they deliberated on their verdict.

M. Joverin, describing a tavern dinner at Worcester in 1659, says:—

"Moreover, the supper being finished, they set on the table half a dozen pipes and a packet of tobacco for smoking, which is a general custom, as well amongst women as men who think that without tobacco one cannot live in England, because, say they, it dissipates the evil humours of the brain."

Smoking appears to have been carried to an extraordinary excess by our ancestors, and indeed in every country into which it had found its way; and although it met with strenuous opposition by powerful authorities both abroad and at home, it seems to have gained ground with singular pertinacity, its votaries persisting to cherish the habit, in defiance of the severest penalties inflicted, amounting in some cases to mutilization and death, as will be seen by the following detail.

Its principal opponents were the priests, physicians, and Sovereign Princes, the former declaring it sinful. In 1590, Shah Abbas forbade the use of tobacco in Persia by a penal law; but the luxury had become so firmly rooted amougst the inhabitants, that many fled to the mountains where they concealed themselves rather than forego the pleasure of smoking. In 1625, the Grand Sultan, Amurath IV. prohibited smoking, as an unnatural and irreligious custom, under pain of death. In Russia, ihe Grand Duke of Moscow prohibited the entrance of tobacco into his dominions, under the penalty of personal chastisement for the first offence, and death for the second; and the Muscovite who was found snuffing was condemned to have his nostrils split, and his hostility against tobacco was so great, that a particular court of law was established in 1634, for the punishment of smokers, which court was not abolished until the middle of the eighteenth century. Pope Urban VIII. excommunicated by a bull of 1624, all persons who took snuff in churches, which bull was re-issued in 1690 by Pope Innocent. In Switzerland

also it was made a subject of public prosecution, and all smokers were cited before the Council at Appenzel, and severely punished, the police regulations of the canton of Berne, in 1661, placing the prohibition of smoking in the list of the Ten Commandments, immediately under that against adultery.

Louis XIV. also endeavoured ineffectually to discourage the use of snuff-taking. His grooms of the bed-chamber were obliged to relinquish it when they were appointed to that office; and the Duke of Harcourt was supposed to have died of apoplexy in consequence of having, to please his Majesty, left off at once a habit which he had carried to excess. An amusing anecdote in connection with the king's opposition, is related of Fagon, his physician; in the midst of a violent speech on the pernicious effects of tobacco, the orator made a pause; and taking his snuff-box from his pocket, refreshed himself with a pinch, in order to enable him to resume the argument.

In England, Queen Elizabeth published an edict against its use, giving as a reason, that her subjects, by indulging in the same luxuries as barbarians, were likely to degenerate into barbarism, however, no persecution in consequence of that edict appears to have occurred during her reign; but in that of James who succeeded, it seems to have become the fashion to decry it, the king himself setting the example, by writing the celebrated "Counterblaste to tobacco," and at the same time imposed a duty intended as a prohibition, of six shillings and eight pence per pound on the importation, and enacted that no planter in Virginia should raise more than 100 pounds of it in one year. There is a tradition in Scotland that he ejected the clergyman of Gullen a district of East Lothian, for the simple reason of his being an immoderate smoker. The following extracts from James's book which was published in 1603, are both curious and interesting:—

"It is a custom loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and, in the black stinking fume thereof, nearest resembling the horrible Stygian smoke of the bottomless pit." "Such," says he in a strain of amusing irony, "is the miraculous omnipotence of our strong-tasted tobacco, that it cures all contrarious sorts of diseases, in all persons and at all times. It cures the gout in the feet; (which is miraculous) in that very instant when the smoake thereof, as light, flies up into the head, the virtue thereof, as heavy, runs down to the little toe. It helps all sorts of agues. It makes a man sober that was drunk. It refreshes a weary man and yet makes a man hungry. Being taken when they go to bed, it makes one sleep soundly, and yet, being taken when a man is sleepie and drowsie, it will, as they say, awake his brain, and quicken his understanding. * * * * * O omnipotent power of tobacco! And if it could by the smoke thereof cast out devils, as the smoake of Tobias's fish did, which I am sure could smell no stronger it would serve for a precious relike, both for the superstitious priests and the insolent puritans to cast out devils withall."

The contrast between the manners of his day, and those of the present generation is thus shown:—

"And for the vanities committed in this filthy custom, is it not great vanity and uselessness that at the table, a place of respect, of cleanness and of modesty, men shou'd not be ashamed to sit tossing of tobacco pipes, and puffing of the smoke one to another, making the filthy smoke and stink thereof to exhale across the dishes, and infect the air, when very often men that abhor it are at their repast. * * * But not only meal time, but no other time nor action, is exempted from the public use of this uncivil trick. And it is not a greater vanity that a man cannot welcome his friend now, but straight they must be in hand with tobacco. No, it is become, in place of a cure, a point of good fellowship, and he that will take a pipe with his fellows, though by his own election he would rather *feel* the savour of a stink, is accounted peevish and no good company, even as they do with tippling in the cold eastern countries. Yea, the mistress cannot in more mannerly kind entertain her servant than by giving him out of her fair hand a pipe of tobacco."

And again:—

"But herein is not only a great vanity, but a great contempt of God's good gifts, that the sweetness of man's breath, being the good gift of God, should be wilfully corrupted by this stinking smoke."

It is probable, however, that the disgust of the royal author, had no influence beyond those who were in immediate attendance upon the court.

Lilly mentions a clergyman of Bucks, who was so attached to smoking, that when he had no tobacco, he would cut the bell-ropes and smoke them.

The London Medical

AND

Surgical Journal.

Saturday, July 15th, 1837.

THE LATE KING'S ILLNESS.

THE BULLETINS.

It is with no small degree of satisfaction that the information which we from time to time presented to our readers, and the opinions which we ventured to publish on the nature of the illness of our late beloved Monarch, have proved to be correct; and it is no small source of gratification to a journalist, to look back and find that all the statements which he hazards, and which were so contradictory to those given by his contemporaries, have been proved, by the late melancholy result, to be worthy of credit. As far back as our number published on the third of June, we stated that his Majesty was attacked with ailments of a serious character, and that, besides a very profuse mucous expectoration, occasionally mixed with blood, there was great embarrasment in breathing, irregularity and diminished frequency of the pulse, anasarcous swellings of the extremities, and though all these alarming symptoms were occasionally mitigated under the judicious treatment and practical sagacity of Sir Henry Halford, no change took place in the general character of his Majesty's ailiments which could have led that able physician to hesitate in pronouncing the fatal character of his Majesty's malady; and the post-mortem appearances afford the most satisfactory evidence of the opinion which was given by the renowned president of the College of Physicians, of the condition of the thoracic viscera. Much dissatisfaction has been expressed by the public in general, on account of the information contained in the official bulletins which have been issued on the late melancholy occasion; but in justice to the medical attendants of his late Majesty, it is but proper to state the particular circumstances under which such documents are framed, and the purposes which they ought reasonably to be expected to fulfil. If the condition of the Royal sufferer be such that the bulletin must be framed to meet his eye, the bulletin signers have a just claim on the indulgence of the public for the imperfect, not to say false, document which they may consider themselves necessarily compelled to present to the public. And in the case of the late King, we can state positively, that on one occasion his Majesty had commanded that the manuscript of the bulletin should be shown to him before its publication, and that the words "continued to do the business of the country" were added to it by himself. But should the condition of a member of the royal family be such as to render it impossible that any public intimation of his malady could never reach his eye, the nation would then have a just right to expect something like an intelligible, if not a strictly true, statement of his disease. And hence it may be observed that there is a tone of veracity in the bulletins which were published during the last eight days of his Majesty's illness, which could not be produced in those of his "distinguished" medical attendants. It is indeed an interesting circumstance, that during his Majesty's last illness, he not only attended to executing the high and important functions of the state, but transacted many minor duties; and though in itself trifling, it is a fact worth noticing in a Medical Journal, that the King, up to a few days of his death, was graciously pleased to condescend to *fee*

he medical attendants, giving a check upon the Privy Purse for £25 for each of heir visits from London.

Though the reports which were published in the daily papers, of his late Majesty having conferred the honour of Knighthood on Drs. Chambers and Davies, have been fully contradicted, yet here is no doubt of Dr. Chambers at least (for we cannot answer for the order of the divine Dr.) having received the Guelphic *order*, as he wore it at the last dinner party at the College, where,—

"He bore his *blushing* honours thick upon him."

DISTRIBUTION OF SUBJECTS FOR DISSECTION.

It is gratifying to be able to state, to those interested in the pursuit of Anatomical Science, that several new regulations are about to be carried into effect at the Home office, to secure the equal distribution of subjects to the various Anatomical Schools in the metropolis—regulations which have resulted from the anxiety of the Inspector of Anatomy, since his attention has been most particularly directed to the point. This will at once remove all the necessity for memoralizing government, and must bea satisfactory reply to the complainants in Edinburgh, of the unjust mode by which the bodies were distributed to the different schools of the Scottish metropolis. The present measure will also relieve Messrs. Grainger, Quain, Partridge, and Tatum, the official representatives of the Anatomical Committee, from their heavy and responsible duties, which they so willingly took upon themselves *solely* for the public weal.

REDUCTION OF HOSPITAL FEES.

There is every reason to believe that the fees of the Middlesex, Westminster, and Charing Cross Hospitals will be reduced to the standard of the North London Hospital. This policy would be wise, and it is only surprising it has not been acted on long ago. The modern taste is in favour of cheap commodities, and the time is gone by when any other will suit the medical student. Certain are we that the fees would be doubled by the proposed plan, for fair competition is most beneficial to trade of every kind.

REPORT OF THE COMMITTEE OF THE WESTERN MEDICAL SOCIETY OF THE COUNTY OF CORK,

For the Year 1837.

The committee of this society in coming forward at the commencement of the session for the year 1837, cannot refrain from congratulating the members, on the steady and permanent improvement of the association since its establishment in the year 1829.

The society had its origin under, it may be said very unfavourable auspices, and and many serious difficulties were thrown in its way; but though prejudices may have arises, and many doubts of success may have been entertained, these have in in a great measure been dissipated, and from the many highly respectable and influential names lately attached to our list of members, we have every reason to expect that its interests will still farther advance, and that the objects contemplated at its formation will be more fully and adequately attained. By some untoward circumstances and by the indulgence of selfish and unworthy feelings, the early development and advancement of this society has been checked; its nature and character have been misrepresented and misunderstood.

Prior to the formation of this society, there was no *nucleus* in the country, no starting point, no source from whence to

originate projects of vital and serious import to the medical profession. Its claims were unsupported, its interests neglected, and had not this society been established, a large and respectable body of our profession would have been materially injured, its interests compromised, and, eventually, the profession at large must have been subjected to the most baneful and injurious results.

The Western Medical Society originated in the very best motives, and its establishment has been attended with the very best consequences; and, the objects contemplated, by the original members, have never been lost sight of,

The society has tended to promote a "more general intimacy and acquaintance amongst the members of the profession" and has ever endeavoured to "diffuse a more kindly feeling." It has enabled the profession "more effectually" to come before the government of the country, and through the means of this association, application has been made to the legislature, for important and deeply interesting objects.

Our last session closed with a dark cloud impending, and to dispel this cloud was our first public effort made. It was not made for the purpose of personal aggrandizement, nor for the purpose of protecting the pockets of individuals. It was not made for the purpose of supporting abuses, or covering the delinquency of any who may have been wilfully neglectful of the important duties committed to their charge; but for the purpose of upholding the character and dignity of that profession to which we belong, and to prevent its interests from being trampled on and destroyed.

By the promptitude and decision of this society, and by its well directed operations, the 18th clause of the New Grand Jury Bill has been repealed, through the instrumentality of the Western Medical Society, two most important meetings of the profession in this county were convened in the city of Cork, and from these originated the most numerous and respectable provincial medical meeting ever assembled in the south of Ireland. At this meeting of the profession of the province of Munster, our talented and highly esteemed deputies (Doctor Nugent and Surgeon Phelan) were appointed. These gentlemen were authorized to proceed to London in order that they might watch the progress and ascertain the nature of any legislative measures to be brought before parliament, to protect the interests of their brethren superintending the charitable institutions of this country, and also those of the profession at large. By the immediate and constant communication of the deputation with many members of the Government, and with most of the influential members of the House of Commons, the degradation about to be inflicted upon a large and respectable portion of the profession has been averted; and the establishment of a system of poor laws, in this country, which has been attended with so many evil consequences in England, and which has been so loudly complained of by our brethren there, has been prevented. And had not this deputation gone forward, the government of the country, in all probability, would never have contemplated a separate legislative enactment for the medical charities of Ireland. By the interviews of our deputies with the Chief Secretary and Mr. Nicolls, these objects have been attained, and by a letter lately received from one of the deputation, we have every just ground for expecting that such measures will be passed as will fully tend to the promotion of the interests and uphold the respectibility and independence of our profession.

But although the 18th clause of the New Grand Jury Bill for Ireland may have been repealed, and although the government of the country may have given their assistance and rectified the evil in that instance, much still remains to be done. An extensive field for further exertion lies before us; and whilst the medical profession throughout the kingdom has felt the impetus of past efforts, we must not now relax. There never was a period so pregnant with interest to the medical body as the present, and it behoves every member of that body to rally round the standard of its independence. The medical profession has its enemies, those enemies are on the alert, and we regret to say, that they have found encouragement in the public press of the day. By some, it may be considered a degradation to notice the anonymous drivellings lately exhibited to the public through the medium of a certain English journal, and it might be deemed more prudent and wise to permit the imputations cast upon the whole body of the profession in the south of Ireland to pass unheeded and unthought of. This we would have done, but for the obstinate perseverance and vicious pertinacity with which those malicions charges have been so unreservedly preferred. Misrepresen

tations have been advanced with the most unblushing hardihood, our motives have been impugned, and we have been stigmatized as acting under the basest and most unworthy feelings. The tongue of slander has been let loose, and the voice of calumny and vituperation has smothered itself in all the mire of anonymous and unaccountable malignity. The shaft, however has fallen stingless and unhurtful. The odium attempted to be fixed upon us, we hurl back upon our accuser, and we commit the secret assassin of the character and reputation of the medical profession in the south of Ireland to the gloomy and miserably degrading enjoyment of selfish malice; and to the gratification in the most contemptible obscurity, of those morbid and mischievous inclinations which must have given rise to a tissue of the most calumnious misrepresentations that were ever permitted to violate the pages of a British periodical.

This society came forward at the close of the last session, in order to remedy an evil universally complained of. To a generous, candid and discerning public, it freely and openly appealed, and that appeal was freely and satisfactorily responded to.

To the council of the British Medical Association for their best endeavours to promote the objects of the deputation, we return our warmest thanks. From it the deputies received every possible assistance, and by a resolution unanimously adopted on the 14th day of March last, pledged itself to use every effort to further the objects of their mission. These efforts have been crowned with success, and the 81st clause was repealed as early as was consistent with parliamentary regulations, and our remonstrance and petitions were thereby proved to be neither frivolous nor vexatious.

It is cause of the highest gratification to find that during the last session, societies of the same character and founded upon the same principles as ours, have been established in other counties throughout the Kingdom, and of their good will and co-operation we have been assured; and we look forward with the pleasing anticipation to the formation of provincial medical associations in Ireland.

In conclusion, to every member of this society, we appeal and earnestly solicit their assistance and exertions to further our common interests, to promote the advancement of science, and to maintain that position in society which must naturally belong to the members of a liberal and enlightened profession.

Signed in behalf of the Meeting,
Matthew O'Hea, M.D., Chairman,
S. Wood, A.M. M.B., Secretary.

Bandon,
June, 23rd, 1837.

TUNNELS.

REPORT ON THE PRIMROSE HILL TUNNEL ON THE LONDON AND BIRMINGHAM RAILWAY,

By Dr. Paris, Dr. Watson, Mr. William Lawrence, Mr. R. Phillips, and Mr. Lucas,

We the undersigned visited together, on the 90th February, 1837, the tunnel now in progress under Primrose Hill, with the view of ascertaining the probable effect of such tunnels upon the health and feelings of those who may traverse them.

The tunnel is carried through clay, and is lined with brickwork. Its dimensions, as described to us, are as follows: height 22 feet, width 22 feet, length 3,750 feet. It is ventilated by five shafts, from 6 to 8 feet in diameter, their depth being 35 to 55 feet.

The experiment was made under unfavourable circumstances. The western extremity of the tunnel being only partially open, the ventilation is less perfect than it will be when the work is completed. The steam of the locomotive engine also was suffered to escape for twenty minutes, while the carriages were stationary near the end of the tunnel; even during our stay near the unfinished end of the tunnel, where the engine remained stationary, although the cloud caused by the steam was visible near the roof; the air for many feet above our heads remained clear, and apparently unaffected by steam or effluvia of any kind; neither was there any damp or cold perceptible.

We found the atmosphere of the tunnel dry, and of an agreeable temperature, and free from smell; the lamps of the carriages were lighted; and, in our transit inwards and back again to the mouth of the tunnel, the sensation experienced was precisely that of travelling in a coach by night, between the walls of a narrow street. The noise did not prevent easy conversation, nor appear to be much greater in the tunnel than in the open air.

Judging from this experiment, and

knowing the ease and certainty with which thorough ventilation may be effected, we are decidedly of opinion that the dangers incurred in passing through well-constructed tunnels are no greater than those incurred in ordinary travelling upon an open railway or upon a turnpike-road; and that the apprehensions which have been expressed that such tunnels are likely to prove detrimental to the health, or inconvenient to the feelings of those who may go through them, are perfectly futile and groundless.

REPORTS ON THE TUNNEL ON THE LEEDS AND SELBY RAILWAY.

Report of Dr. Davy, and Dr. Rothwan.

After careful inquiry, and an examination of this tunnel, we are of opinion that it has no injurious influence on the health of the passengers. We have come to this conclusion from finding:—1st. That the air in the tunnel at the time of passing is not appreciably vitiated. Chemically examined, its composition appears to be the same as that of the atmosphere, even after repeated transits of the locomotive engines.

2nd. That the temperature of the air in the tunnel, though more uniform than that of the external air, does not vary so much from it as might have been anticipated. In the warmest weather in which observations have been made, the air of the middle of the tunnel was only eight degrees lower than that of the atmosphere, the latter being seventy degrees. In February the greatest difference we found was also eight degrees, the atmosphere then being at 56 degrees. We were assured that, during the severest weather of last winter, the temperature of the tunnel never fell to the freezing point.

3rd. That the humidity of the air in the tunnel, judging from the few experiments which we have been able to make, will be more uniform than the temperature. That it will generally be somewhat greater than that of the external air, but never sufficiently so to cause the precipitation of aqueous vapour in the carriages, or on the persons of passengers.

4th. That we have not been able to detect, in any part of the tunnel, traces of acid, or other irritating or noxious effluvia.

The tunnel, at present, is passed through in darkness, which, though not dangerous, is to many persons unpleasant. This seems to require correction, and it is understood to be in contemplation to attach lamps to the carriages.

The noise made by the engine and train of carriages did not seem to us much greater in the tunnel than in the open air, nor to form any reasonable ground for complaint. Annexed to this report is a certificate by Dr. Williamson, a high medical authority in Leeds, generally in accordance with the opinions above expressed. He has even arrived at the conclusion, which we see no reason to doubt, that travelling on the railway is often beneficial to persons in delicate health, particularly in certain cases of slight pulmonary disease.

The tunnel in question is situated very near the terminus of the railway in the town of Leeds. It is 700 yards in length, 17 feet high, and 22 broad. Its direction is nearly east and west. The inclination of the floor is 1 in 300. It has three shafts at irregular distances, which now serve the purpose of ventilation. The westernmost is somewhat the deepest; the depth of this is 23 yards, measured to the floor of the tunnel. The tunnel is bricked throughout its whole extent. It is traversed by 20 engines daily, and on an average by 350 passengers. The average time of passing is about a minute and a quarter. The steam is generated by coke of the best quality, under a pressure of 56 lbs. With regard to our sensations in passing through the tunnel, with the windows of the carriage purposely left down, we experienced nothing unpleasant, either from smoke, vapour, or currents of air. The temperature in the carriage was agreeable, and everything felt dry.

We would conclude by observing, that the opinions we have expressed of this tunnel we hold to be applicable to all other tunnels, the circumstances of which are similar; and to tunnels of greater length, if they are higher and have a sufficient number of shafts to secure an adequate ventilation.

DR. WILLIAMSON'S REPORT.

In reference to the effects of the transit through the tunnel of the Leeds and Selby Railroad on the health of passengers, I have to state that, in the whole of my experience, both in private practice and in my official connexion with the Infirmary, and with the other medical institutions of this town, I have, indeed, frequently recommended delicate persons to make excursions on the railroad for the benefit of

their health, and have known very decided advantages to accrue from such excursions to persons even labouring under the slighter forms of pulmonary irritation.

I conceive that the vapour, smoke, and the gaseous results of combustion can never exist in such proportions as materially to deteriorate the air; and that there is no humidity or deleterious emanation, peculiar to the tunnel, which can be appreciably detrimental to animal life.

I believe that persons of irritable bronchial membrane may respire in the air of the tunnel for a considerable period without feeling the slightest inconvenience or sustaining any injury.

RESEARCHES ON NEPHRITIS,

OR

INFLAMMATION OF THE KIDNEYS.

By Professor Chomel.

The diagnostic of the inflammation of the kidneys sometimes offers great difficulties. In its acute form nephritis has a great resemblance with several other abdominal affections, such as partial peritonitis, inflammation of the stomach and intestines, nervous colics, acute rheumatism of the psoas and iliac muscles of the lumbar region. Sudden and acute pains, mostly near the kidneys, pelvis, and ureter, their progress or extension from the kidney to the bladder. The numbness of the opposite thigh, pain on pressure near the kidney exclusively, in men painful contraction of the testicle; the pains are so intense, that patients sometimes utter the most piercing shrieks, and make the strangest contortions; they retain the power of bending and raising the body without greatly increasing the pains; nausea, vomiting, accompany the exacerbation of the pains, which are irregular; they decrease or increase, entirely disappear, and then come on with almost unbearable intensity: there is marked alteration in the secretion of the urine, for instance, suppression, or mixture with blood or gravel; such are the signs best calculated to fix the judgment of the practitioner, and their union leaves no doubt as to the seat and nature of the disease.

If the accidents arise a second or third time; if without having had nephritis, the patient has already voided blood or gravel with urine, in all these antecedent facts, the practitioner has new signs, which may enlighten him, and arrest his attention at the commencement of the disease. But in most cases the evil is not accompanied by all these symptoms, and the diagnostic offers difficulties which compel the physician to suspend his judgment, not only in the early stages, but even sometimes after the termination of the disease.

In cases, for instance, in which, after having observed the rational signs of nephritis, and particularly the speedy progression of acute pain from the kidneys to the bladder, in the direction of the ureter, these accidents completely disappear, without any foreign body being found in the urine, or without any show of blood, it is often very difficult to determine whether there has been inflammation of the kidneys, or rheumatism of the lumbar muscles and psoas. If we read attentively the history of Boerrhave's disease, as related by Van Swieten, we shall find in the sudden invasion of pain, in the nausea that accompanies it, in the vesical tenesmus, much reason to doubt that he was correct in supposing that he had only a lumbago.

As in nephritis, urine furnishes the best means for establishing a diagnostic, too much attention cannot be given to this fluid. It will not suffice to recommend that the urine be not thrown away for four and twenty hours, but it must be examined immediately, before it may be thickened by cold; if any sediment be found, it should be put into water, and kept till the arrival of the medical attendant, who, by the consistence and aspect, will judge of its importance.

By this continued and attentive observation, during the course of acute inflammation, a just opinion of the character of the disease may be formed; while by neglecting these means, doubts may exist.

It is also of the highest importance, in cases where circumstances may lead to the suspicion of nephritis, to pay particular attention to the produce of some other excretions; thus the urinary odour of cutaneous transpiration may become a sign of some importance, in case of complete occlusion of one of the ureters, or simultaneous inflammation of both kidneys; the urinary odour of the pus escaping by fistulous course accounts for the origin of this fluid: in cases similar to that of Fanton, where the pus ran into the colon, and was excreted by the anus; and that of Dehaen, where the left lung and the kidney formed a large *sac*, a more attentive examination of the pus, either by the smell, or by chemical reactives might

probably conduce to discover the origin of the fluid. I say probably, because the alteration of the kidney might be carried to so high a degree, that the secreted fluid would not contain any of the characteristics of urine.

The diagnostic of chronic nephritis is, in many instances, most difficult, especially in those in which the cause that has given rise to inflammation, has at the same time produced complete occlusion of the ureter. Nephritis may also be mistaken for a disease of the spleen, or of the pancreas, caries of the vertebræ, chronic rheumatism, enkysted tumour; and in females a disease of the ovaria.

The seat of the pain, a tumefaction, more or less apparent, and the sensation of weight in the region of the kidneys, which according to Galen, the patient would only feel while lying in the stomach, vomiting, engourdissement of the flank and the corresponding thigh; and in man, even the painful stricture; and later on, atrophy of the testicle, are not symptoms sufficiently certain to fix the diagnostic in cases, not confirmed by the examination of the urine.

If the presence of pus or blood in the urine leads to a suspicion of an affection of the kidney, it must be remembered that an ulceration or cancer of the bladder, or calculi in the viscera, an abscess opening in its cavity, an engorgement of the prostate, may also give rise to these symptoms; and before an opinion is given, it is therefore necessary to ascertain all past circumstances, to explore the urethra and bladder in both sexes.

Prognostic.—Whatever may be the form or degree of intensity of nephritis, it is always a serious disease.

It is of a far less alarming nature when the inflammation is caused by external violence, or when it is not very intense. But when it arises without any apparent cause, and is owing to the presence of calculus in the pelvis or ureter; the disease itself, when it does not threaten the existence of the patient, is of a nature to inspire a fear that the disease will appear in different forms, more or less often; that it will eventually cause suppuration of the kidney, and the death of the patient.

When the disease has become chronic, and the kidney suppurates, or there is hectic fever, death is generally the result of this malady. But there are examples of individuals who have survived this complication of alarming symptoms. Accompanied by our friends, MM. J. Cloquet and Louis, we saw a patient reduced to the last stage of marasm, by suppuration of the kidney, combined with hectic fever, which lasted three months; yet he regained the appearance of almost perfect health.

Forestus relates the case of a priest, aged 45, who, during three months, voided urine mixed with pus, sometimes with blood, and who, owing to this affection, became very thin. Mild regimen, composed chiefly of milk, restored him to health. Forestus mentions two other cases, in which suppuration of the kidneys was treated with equal success.

But a much more remarkable fact, which leaves no doubt as to the possibility of the cure of nepthritis, with suppuration and destruction of the tissues of the kidneys, occurred at the *Hotel Dieu*, in 1835.

Jean Latour, aged 71, a comb-maker, of robust constitution, and general good health, was brought to the *Hotel Dieu*, the 30th of July, 1835. Three days before, he had suddenly felt violent pain in the head; hemiplegy to the right, and fainting. There was total absence of motion and feeling on the whole of the right side of the body; the patient was bled in the arm, and cupped on the nucha, the inferior limbs were covered with revulsives, and aperient injections were administered.

The patient died on the 4th of August, without any indication of the pathological alteration of the right kidney, nor any account of the succession of symptoms to which this alteration certainly gave rise.

When the body was examined, there was white *ramollissement* of the brain outside rather above the left *corpüs striatum*, being fifteen lines long, to eight in height and width, and without the least trace of sanguine effusion. There was also a considerable sub-arachnoidien œdema.

The heart was nearly double its usual size, and the left ventricle alone formed three parts of the mass. There was concentric hypertrophy, and the cavity was very small. There were also bony plates in the aorta. But the most important alteration in the present instance, was that of the kidneys.

The left kidney was twice its normal size; it was red, and perfectly healthy in every respect. Instead of the right kidney was found an irregular mass, which, carefully dissected, offered a sort of membraneous sac, nearly the size of a pigeon's egg, formed by the calices, the pelvis, and ureter, and containing about half an ounce of clear fluid. Round these membraneous sacs there were no traces of coriaceous and streaked substances. An abundant

cellular tissue, yellow, and mixed with greasy flakes, united these parts.

The *suprarenal* capsule is very distinct, and in its natural state. Two inches from the pelvis, the ureter, which is three times its usual size, is closed by an ovular calculus, black, hard, and which entirely obliterates it. Above the obstacle the ureter is small, but still free, opening as usual into the bladder; this latter organ is perfectly healthy.

This fact, as we have already observed, leaves no doubt as to the cure of calculous nephrites, with suppuration and destruction of the renal tissue, and it will be easy to prove it. The presence of a calculus in the ureter, the dilatation of this tube above the calculus in the ureter, the dilatation of this tube above the calculus, and its narrowness below, do not permit us to say that the anatomical conditions of the kidney were congenital. If this patient had only the rudiments of a kidney, it would be quite impossible for a calculus to have been formed, or that a calculus caught in the urethra could give rise to alterations in the diameter of this tube.

The supposition of impeded development, or malformation being inadmissible, we are obliged to recognize a diseased kidney in the small membraneous kyst, where the renal vessels meet, and from whence the pelvis issues. As a kidney cannot be reduced to the state of a membraneous point until it has undergone a dilatation that has made its own tissue disappear, and that this dilatation, and destruction never exist without occlusion of the ureter, and suppuration of the kidney, it results, in the first instance, that the kidney to which we allude, had undergone this alteration, and secondly, that this alteration is not necessarily dangerous.

Treatment.—The treatment of acute nephritis is in general founded on the same principles as that of other inflammations: general bleeding and cupping on the renal region, repeated according to the intensity of the affection, and strength and age of the patient; baths, hip baths, soothing poultices, or fermentations; mucilaginous injections; cooling beverage, such as whey, emulsions, decoctions of barley, marshmallow, linseed, are the means generally employed.

Independently of indications common to nephritis, and other phlegmasiæ, there are some which peculiarly appertain to nephritis. The degree of heat in the whole body, and most particularly the lumbar region, caused by lying on a soft bed would be very injurious.

The well known utility of placing the inflamed organ in a state of repose, furnishes another and special indication. The abundant beverage recommended in other phlegmasiæ, would in nephritis increase the action of the kidneys, the patients should therefore only drink sufficient to allay their thirst, and in very small quantities at a time, particularly when the suppression of urine gives reason to fear the complete occlusion of the ureters. The beverage should be tepid, if cold, the secretion of urine would be increased.

Another important point in the treatment of acute nephritis is, to insist on the patient remaining as quiet as possible. As the presence of a calculus is almost always the cause of the disease, the least change of position in the patient might suffice to bring on sudden and intense pain. There are, however, exceptions to this precept of complete immobility; it is not applicable in cases where the intensity of the pain naturally leads the patient to roll in bed, or on the floor. In these exacerbations, immobility is not only impracticable, but might be prejudicial. Indeed, while it is most important not to move during the cessation of pain, there is no reason for remaining still when the pain is so intense as scarcely to admit of increase.

Narcotics, sometimes employed with advantage in several other phlegmasia, particularly in dysentery, are mostly indicated in acute inflammation of the kidneys, on account of the pain, which generally surpasses that which takes place in other inflammations; consequently while we have recourse to antiphlogistics, we must not hesitate, when the pains are very great, to make the patient take every hour, or every half hour, half a grain, or even a grain of opium, either in pills, or in draught; it is generally preferable in a draught, because it acts more speedily; but if the nauseous flavour of this remedy increases the *vomiting*, pills are more desirable, and injections are still better. The decrease of pain, or a commencement of narcotism, show when the use of opium should be continued or suspended.

If an active revulsion towards the skin appears requisite, the special seat of the inflammation necessitates some precautions in the choice of the means employed to produce it. The use of cantharides must be avoided, which even externally in some persons produce, in the urinary

passages, accidents analogous to those we purpose to combat. Consequently when it is necessary to produce rubefaction, or vesication, we must scrupulously abstain from topical cantharides, and employ some other, such as flour of mustard, or ammoniacal pomatum.

When nephritis has given way to these remedies the patient must not remain in ignorance as to the possibility of a recurrence of the disease, if he be again placed in the same conditions as when the disease was first developed. When the accidents have completely ceased, without gravel having been found in the urine, or without a calculus falling in the bladder, the patient should be recommended, if he has felt symptoms of acute nephritis, to follow the regimen prescribed to individuals who have actually had calculi in the kidneys.

The regimen consists principally in the use of vegetables, cooling and diuretic beverage, especially alcaline waters, taken in large quantities; abstaining from heating liquors and food, and violent and prolonged exercise, and remaining night and day in a cool temperature.

If after one or two attacks of acute nephritis, suppuration be formed in the kidneys, the case must be considered very serious, and the assistance of art merely tend to alleviate the pain, and prolong existence.

At all events, in some instances, there has been cure when suppuration of the kidneys existed. In these cases milky or vegetable diet; the establishment of one or more setons in the lumbar region; change of scene, climate, country air; alcaline mineral water, are means generally employed with the greatest chances of success, according to the state of the cases.

When the pus formed in the kidney tends to break out, it is advisable to open the abscess, whether deep or superficial, and seek for the calculus, and extract it, however deep it may be situated.

In a case of this sort J. L. Petit was so fortunate as to cure an individual in whom he had taken a three-branched calculus from the lumbar region, and who, after the operation, had a urinary fistula. If the calculus be strongly adherent, the fistulous passage should be kept open by proper dressings, until the calculus could be withdrawn.

With regard to suppuration of the kidney, this disease is always of long duration; whatever may be its issue, it is necessary to keep up the strength of the patient, notwithstanding the state of the fever; but the nourishment must be mild and of easy digestion.

I must again repeat, that at all periods of calculous nephritis, the disease is calculus; inflammation is but a secondary phenomenon. We must, therefore, always insist on alcaline waters, in as high a dose as the digestive organs will permit, with the double view of dissolving the calculi that may exist in the urinary passages, and to prevent the formation of new calculi.

Waters taken from their source are always preferable, because the patient can not only drink them, but can also have the advantage of baths. It is true there are some calculi which resist the dissolvent action of the alcali, but this calculi is very scarce, if compared to those dissolved, softened, or separated by reactives.

Some persons have given the name of albuminous nephritis to a disease described by Dr. Bright, under the name of granulous disease of the kidney. We have not mentioned this disease in the memoir, because we did not wish to mingle in common considerations two distinct pathological alterations.—*Continental and British Med. Rev.*

LUPUS TREATED BY CAUTERIZATION AND ARSENIATE OF SODA.

By M. Baudelocque.

Hospital for Sick Children.

Since last October there are two children in the hospital with lupus on the nose. Though the treatment has been varied and active, yet these affections are not yet cured; however there is every reason to believe that the continuation of the same means may suffice to remove them entirely, as the improvement is great.

The two little girls have been subjected to nearly similar treatment. Both had a large scab on the extremity of the nose; the suppuration, caused by the ulcers under the scabs, escaped in several places. The scabs came off; it was found that the lobule of the nose was nearly destroyed by several ulcers with uneven edges, extending along the nose. These ulcers were touched in several parts with nitrate acid of mercury, and hydrochloride acid;

but the new scabs came off, and it was evident there was no improvement.

M. Baudelocque prescribed arseniate of soda, the sixth part of a grain. This dose was gradually increased to a quarter, then a third, then half. One of these little girls had violent colics, and the medicine was suspended; the other child did not suffer in the same way. Caustic iodine was substituted for the above mentioned caustics; but the scabs were speedily formed again, and ulcers were found in the same state when the scabs came away. Mr. B. then tried the effects of a caustic, of which arsenic was the basis: the following is the recipe of this composition.

Quick lime four ounces, sulphuret of arsenic an ounce, to be pounded; second lixivium magistrale, two tumblers; boiled till it thickens; to be kept well covered.

Mr. B. found this paste a valuable caustic in bad ulcers. It has been frequently employed in the hospital for children, and never gave rise to symptoms of absorption of arsenic; it was applied three times to the two young patients we have named.

When the scabs came away, the ulcers were covered with this paste, taken up with a spatula. The caustic soon acted, and caused great pain. The children complained sadly all day, and a large dark scab was formed by the following morning, which was three weeks coming off. But shortly after the cauterization, a few drops of sanies escaped, which showed that the ulcers were not cicatrized. A third application of caustic was made, and as the scabs seem quite dry, and there has been no further discharge, it is to be hoped cicatrization has taken place.

During this treatment, arseniate of soda has been administered, though suspended several times, either for the colics, as we have already stated, or for acute ophthalmia, with which one of the children was affected. No change has been made in the regimen, and every week an aperient draught was given.—*Ib.*

ON THE ORIGIN OF CANCEROUS TUMOURS IN THE BREAST,

And the means of preventing this fatal termination.

By M. Lisfranc.

The 7th of November, 1836, a woman left the hospital de la Pitié, where she had been for several weeks, with an inflammation of the breast. Several abscesses were opened by M. Lisfranc. The wounds were gradually healed, yet there remained various small engorgements; when the woman insisted on leaving the hospital.

M. Lisfranc observed, that engorgements of this description were very common after parturition; but, unfortunately, females gave very little attention to them; sometimes they were removed by the assistance of nature alone; but they were also known to remain indolent for many years; give no pain, cause no uneasiness; but when menstruation ceased, these indurations, hitherto so indolent, became very painful, and were transformed into as many scirrhous tumours.

Most of the females, who have their breasts amputated, admit that neglected engorgements have been the origin of scirrhus.

When the surgeons are called to remove engorgements, after they have existed two or three years, they find the greatest difficulty in bringing on a resolution; whereas, if they be recent, a few sanguine evacuation, poultices, and baths, remove them in a few days. The greatest attention should therefore be given to these engorgements, as by a simple medication, a cruel and fatal disease, which baffles the powers of art, may be prevented.

These considerations on the cause of most of the scirrhous indurations of the breast, lead us to examine this important question:—

Which are the engorgements of the breast we should endeavour to resolve?

Many practititioners have unhesitatingly declared, that these indurations should be extirpated with the bistoury, and others recommend attempting resolution. M. Lisfranc thinks that between these two extremes there is a more rational method, and that distinctions must be established before any step is taken.

Many patients, of lymphatic constitutions, admit they have had swelled glands of the neck, under the arm, and in the groin; some have glands of this description in the breast, which have gone off unaided.

These circumstances may lead to the presumption that the engorgement of the breast, at present existing, may be a lymphatic engorgement. Cold abscesses are as liable to be developed in the breasts, under the arm, and in the groin, as elsewhere. The engorgement of the lym-

phatic ganglia developed under the influence of this canse, may, in the first instance, be overcome by milder means than extirpation; and even admitting that this induration may one day degenerate, and be transformed into a cancer, is it not rational to attack it by all the dissolvents known in medicine, before we have recourse to an operation, which, however slight it may be, is always attended with danger, and what objection can be raised against this proceeding?

An engorgement of the mammary gland does not suddenly increase; the constitution is not from one day to another invaded by diathesis; and if the dissolvents are judiciously employed; if the stages of the disease be carefully followed, is it not full time to have recourse to an operation, when medicinal means are found to be important. At all events, the utmost that will have been lost, is a little time, and surely this is nothing, when the object is to avoid a cruel operation.

It must not be forgotten, that there are cases in which it would be rash to attempt to use dissolvents; if the tumour be recent, not very large, no inequality on the surface, not hard, resolutives should be employed. If, on the contrary, the tumours are as numerous as four or five, hard, voluminous, adherent; if there be engorgement in the armpit; if on certain parts of these tumours, there be ramollissement, dissolvents instead of arresting the course of the disease, would hasten the carcinomatous degenerescence, and the operation must be performed without delay, if it be not too late.

M. Lisfranc does not attempt to obtain the resolution of scirrhous tumours; he is not aware whether the engorgement of the breast is complicated with inflammation, or whether they are produced by inflammation; but it is certain that in many cases resolution has been obtained when there was sufficient cause to show the necessity of extirpation.

In following the rules prescribed, in seizing the characters indicated, dissolvents and antiphlogistics may be employed, but if there be reason to suppose that success will not attend these measures, they must on no account be resorted to, however desirous the patient may be to make the trial, in order to avoid an operation.—*Ib.*

OBSERVATIONS
ON
FURUNCULUS PANULATUS.

By M. Alibert.

These boils were very long since designated by the name of *furunculi panulati*, because when the tumour broke there was an oval perforation. M. Alibert did not think it right to change this denomination.

These furunculi are very long coming out; they sometimes remain for years in a state of *crudity;* they dry up in their sphere of irritation, and when scratched are gradually reduced to dust; they may grow on all parts of the body, and after they disappear, there remains for a long time an ecchymosis similar to that which preceded their apparition. The furunculi panulati ought not to be confounded with various eruptions met with in the facial tegument.

The following case is a striking example of the furnuculus panulatus:—

A man of a sanguine constitution, fat and strong, is accustomed to hard labour; he has never had any syphilitic disease, nor any other disease of the skin than the present one. Eighteen months ago, a red spot appeared on the lateral side of the nose, on the right: this point was like an ecchymosis, but, after many weeks, a small hard tuberculus appeared; it gave no pain, it could be pressed under the finger. This tubercle remained *eighteen months* stationary, gave little suppuration, and disappeared. Some other tubercles occurred, and remained a very long while. Some are still existing; pressed by the finger they give no pain, but what is constant is the red spot, sometimes bluish, which lasts long before and after the tubercles.

M. Alibert employed, with some advantage, nitratis argenti, for the cauterization of the furunculi panulati.—*Ib.*

A LETTER
ON THE
BETTER REGULATION OF MEDICAL CHARITIES;
IN REPLY TO A CIRCULAR ISSUED BY THE ROYAL COLLEGE OF SURGEONS.

By Edward Bewley, Surgeon.

"As to the medical attendants on most of the public charities, they cannot, by any alteration in the existing laws, be

much worse circumstanced than they are at present. They are, notoriously, most inadequately remunerated. Take a country dispensary for example. In the greater number of these, a gentleman of talents and education is expected to devote four hours of every alternate day to attendance on the poor; to visit (often at night) such as are unable to attend the dispensary, at a distance of five miles from his own residence; and to endure all the hardships of protracted midwifery cases, during which he is frequently obliged to remain the whole night in filthy hovels—all for sixty pounds a-year! This is actually the average salary of a qualified surgeon in such institutions; in a few instances it may be somewhat more, but in others it is considerably less. And for this paltry sum he must keep at least one horse, and maintain a respectable appearance in society. In fact, no one would accept of such a situation, were it not with the hope that it may prove a stepping-stone to practice; but in this expectation they are frequently, I might even say, generally, disappointed. The public, in its wisdom, prefers the man who seems independent, though he may, in reality, be a person of inferior acquirements.

"The surgeon of the county infirmary is situated under far more favourable circumstances. His very position places him at the head of the practice in the county; his duties are but trifling when compared with those of the dispensary surgeon; and he is much better paid. I have no doubt that there are many highly respectable members of our profession, in every respect fully qualified for the office, who would gladly undertake the charge of a county infirmary for half the present salary; and I am confirmed in this opinion by the well-known fact, that the situation has been frequently purshased for a large sum of money. Taking all these matters into consideration, I am therefore not at all disposed to look with a jealous eye on the proposed reduction of the salary—provided due regard be had to existing interests.

"It appears that the sum of £100 a-year, which is to be withdrawn from each infirmary, is to be appropriated to the payment of medical inspectors. The duties of these officers, as mentioned in your circular, are so vague and undefined, that I am hardly prepared to give an opinion as to whether their appointment may be objectionable or not. I can very well conceive that such an office, entrusted to intelligent and well-educated men, might be productive of the most beneficial results, both to the public and to the profession. If they were disposed to act in harmony with their brethren, they might be the means of promoting union among the whole body of medical men, a 'consummation devoutly to be wished.' In a statistical point of view, also, their services might be made invaluable. But I am sure I only echo the sentiments of the entire profession, in strongly protesting against the interference of the inspectors in the treatment of the patients entrusted to the care of the medical attendants of hospitals and dispensaries. So monstrous a power would nullify itself—it could never be enforced—it would never be submitted to.

"The next clause of the act to which you refer, is that requiring all surgeons of hospitals, &c., to be members or licentiates of some college of surgeons. From this I infer that it is proposed to throw open our county infirmaries to qualified surgeons, without any regard to the college from which they have obtained their diploma. This, rightly considered, is perfectly fair and equitable, and strictly in accordance with the principles which should actuate a legislature, in the framing of laws for the government of scientific institutions in a free country. But I must acknowledge, that I do not consider the mere possession of a diploma from any college, except that to which I have the honour to belong, as a real qualification. I do not say this invidiously, or from *esprit du corps;* but because the examination of candidates for the diploma of the College of Surgeons in Ireland is held publicly, and is much more severely and searching than that of any other similar body. I should therefore deem it highly advisable, if our college is to be deprived of its privilege of providing surgeons for the county infirmaries, that a board for the public examination of candidates should be estab ished in lieu of it. Of course, I mean that this board should examine candidates for all medical appointments under the controul of government.

"I now come to the consideration of that paragraph of your circular, in which you detail the instructions which your deputation in London has received; and here you must pardon me if I enter somewhat more fully into the subject than at first sight may appear necessary. Passing by, for the present, the first sentence in the paragraph, or that which refers to your praiseworthy exertions for securing to the

medical officers of charitable institutions "a permanent, defined, and adequate salary," I shall proceed at once to offer a few remarks on the concluding sentence. In this it is stated that "they (the deputation) have been instructed to exert themselves to have some standard of education established by law, to constitute the qualification to fill the situation of hospital or dispensary surgeon or physician." I take it for granted that the above quotation means that you conceive it necessary that candidates for those situations ought to be obliged to produce a certain number of certificates of their having heard certain lectures, delivered by certain professors; of attendance at certain hospitals for a certain length of time; and of their having practised dissections at certain medical schools for a certain number of seasons. If this be a correct interpretation of your meaning, I must beg leave most respectfully to express my dissent from the doctrine, that any specific number of such certificates can constitute a legitimate or genuine qualification. It is well known to every teacher, that one person, either from industry or his natural talents, will be able to acquire a considerable portion of knowledge in a short period of time, say a year; while in another, through idleness, inattention, or inherent stupidity, the same degree of knowledge will require ten years for its acquisition. Where, then, is the utility in establishing a "standard of education?" Is it just that he who really possesses the requisite information, should be debarred the attainment of his legitimate reward, merely because he cannot produce the full number of certificates required by law? Or, on the other hand, should the idler or the booby, who has dozed away his time in the lecture-room, or heedlessly lounged through the wards of an hospital for a certain number of years, bear away in triumph the honours and emoluments to which he is not fairly entitled, because he is possessed of the required certificates? Assuredly not.

REVIEW.

The Philosophy of Human Nature in its Physical, Intellectual, and Moral Relations: with an attempt to demonstrate the order of Providence, in the three-fold constitution of our being. By Henry M'Cormac, M.D. London: Longman, Rees, Orme, Brown, Green, and Longman. pp. 564. 1837.

Doctor M'Cormac is already well known to our readers as an author of considerable observation, much research, and persevering industry, from his able work on continued fever (a review of which appeared in this Journal about two years since).

We are again happy of having it in our power to speak favourably of Dr. M'Cormac's abilities; his present volume, although it does not possess much originality, or great demonstrative depth, possesses sufficient to amply compensate the reader for its careful perusal. The simplicity of the style, the order and arrangement observed throughout, the numerous familiar illustrations brought forward, and the importance of the work in a moral and religious view to the legislator and the philanthropist, must render it acceptable, not only to the profession which has the good fortune to have the author enrolled amongst its members, but also to the general reader.

After enforcing the necessity of studying our nature in its three-fold division in regard to the body, the intellect, and the feelings and affections, and consigning to the "night of time," the doctrine of "innate ideas," our author proceeds to show that "all the ideas which we are capable of experiencing, flow in the first instance from sensation; a truth of great importance in education, as well as in laying a foundation for the argument from analogy, in favour of the similar origin of the affections, feelings, and moral judgments," our demand upon the legislator and philanthropist, for a wise and universal education, is thus demonstrated:—

"If our knowledge—if our qualities whether for good or for ill, are in no case inborn, it necessarily follows, not only that all are capable of superior intellectual and moral culture, but that all have an unequivocal right to receive it."

We cannot better express the views and philanthropic desires of Dr. M'Cormac, than by permitting him to speak for himself:—

"I experience an unflinching confidence in the fulfilment of the superior destinies of our race. It is a long-cherished conviction, and one which I shall carry to the grave. God is just and merciful: he has implanted capabilities that can never be exhausted. The grievous errors which mark our career, must be ascribed to defective training, deteriorating circumstances, and insufficient personal exertion. Even the wisest and best probably, afford but an imperfect criterion of

what, under happier auspices, all might become. At birth, we are innocent, and, with proper management, might remain so through life. What a glorious prospect does it not unfold to mankind, when they shall acquire wisdom enough to apply the principle to the full extent. There need then be no ignorance, no want of feeling, and no crime; and why, but because all shall be cultivated, and because it is impossible for such unhappy results to accrue, when the causes which lead to them are lopped away for ever. All other public measures dwindle into insignificance, when contrasted with the efficacy of universal training. In ten short years, the machinery of instruction might be brought into operation, and a moral revolution gradually accomplished."

The difficulties which present themselves to the accomplishment of this desirable end, our author thus boldly puts forward:—

"There are too many jarring interests and conflicting opinions, however, as well as too low an estimate of the dignity of human nature, to permit a provision of such boundless utility to be carried into effect. Even so, then, until the world consent to work this great good, so long shall desolation, and sin, and misery prevail. It is not intellectual cultivation alone, that will do the work; the feelings, affections, and moral principles must be developed, while the physical condition of the community at large must be elevated."

Yet great and many as jarring interests and conflicting opinions may at present be, a golden era is expected by Dr. M'Cormac:—

"Let existing obstacles, however, be what they may, the time must work round when they will fade into nothing, and when the human race shall assert with one voice, their indefeasible rights never to be deprived of them again. Step by step mankind approach a consummation of virture, knowledge, and happiness, which the world has not yet seen. We might be faint hearted indeed, were this mighty change to devolve on human agency alone; but the path has been marked out by superior skill, and the operation of circumstances, under the control of an all-directing Providence, must finally lead us to the happy goal."

"A consummation devoutly to be wished."

We have not space to enter more fully into our author's opinions; the general style of the work may be gathered from the following:—

"How well adapted is the organ of vision to convey expression? How speaking is the eye of intellect; or powerfully does it reflect the impulse of every passion—of love, of hatred. and of scorn! Yet how vacant is the eye of apathy and ignorance; but, above all, how dull and unmeaning is the eye of the dead! There is no limit to the impulses which this organ conveys from the soul, and none to those which it can bring back. The language of the eye includes a host of ideas and feelings innumerable: how poor would speech become without its aid; how vast its addition to human intercoure. Does it not yield an expression of friendship, love, parental affection, filial reverence, mute obedience, exultation, curiosity, heroic daring, ardent hope, and devout submission, to which no tongue could give utterance? Such copious access to God's creation and the face of human kind, yields scope for boundless gratitude. For how desolate is the darkness of the poor blind, who can never hope to look abroad, till the great veil is lifted up that sunders life from immortality?"

"The mind itself, is the ultimate vehicle of every kind of emotion, whether pleasurable or painful; the satisfaction produced by music however, is owing partly to association, and partly to the structure of the ear. How could the gratification which is yielded by delightful melody, or full rich harmony, be ascribable to the former alone? Nothing can render the discord in itself pleasing; the distinction is marked out by nature, and cannot be invaded. Whatever instrument be selected, the great requisites are execution, expression, and lastly, scientific knowledge. Method may direct, but cannot create feeling; yet, without this, no one can be a musician. There may be execution, but the soul of music—the quality, without which, the art is but the husk or shell, is wanting. Faultless execution is necessary to do justice to feeling, imagination and judgment: for of what avail is it to feel, if we cannot reproduce our emotions? Without the foregoing requisites, the most admirable compositions fall dead upon the ear; with them, indifferent, and even imperfect productions, tell."

"Governments are abstractions of popular power; owing their existence to it, but acting independently. Their influence on morality, though of a mixed and inferior nature, is very great. It is enough to excite mournful reflections,

when we consider what governments might do, and what they omit doing; how education is limited and perverted, and how the diffusion of knowledge is shackled and restricted. If they represented the enlightenment of community, these things could not be. It is a problem worthy of solution, how it happens that the governments of Europe and of the world, exert an almost irresponsible power; or how it is, that everywhere the best interests of the many, are more or less misunderstood and opposed? How long is this state of things to last, or when shall governments concentrate their energies for the common enlightenment and happiness of mankind? It is difficult to propagate truth without enlisting under the banners of a party; but there can not be the party of humanity—a party advocating without restraint, the principles which concern the well-being of our race? Among the inferior passions, truth and excellence have a fierce and implacable opponent in party-feeling. Even the powerful enginery of governments is controlled by its agency. In mischief-working, however, it must yield to fanaticism, which at times, is an epitome of everything that is base. When the two are combined, iniquities the most demoralizing, result. It is not that these vices are so destructive in themselves, as that they become the vehicle and the pretext for personal enmity, and every form of human malignity. Truly, if humanity prove noble and admirable under some aspects, it is base and despicable under others. How then, shall we adequately denounce those destructive qualities, that convert the milk of human kindness into gall and bitterness. and sow the heart with sin and misery? Party-feeling in its worst features, is indeed a wide remove from that rational and benevolent patriotism which wills and works the good of all—of family, country, and humanity."

BOOKS FOR REVIEW.

Medical Essays, by J. Hungerford Sealy, M.D., &c. No. II. The Imagination, its History and Effects. London, 1837. 12mo. pp. 91.

The Teeth a Test of Age, considered in reference to Factory Children. By E. Saunders. London, 1837. 8vo. pp. 76.

What Asylums are and ought to be; being the substance of Five Lectures delivered before the Managers of the Montrose Royal Lunatic Asylum. By W. A. F Browne, Surgeon. Edinburgh, 1837. 8vo. pp. 231.

TO CORRESPONDENTS.

Bibliopole.—The account of the reading-room of the College of Surgeons is very amusing; could our correspondent favour us with any *particular* conversation?

A Finsbury Elector —Our correspondent must apply to a contemporary hebdomadary.

An Attorney.—The particulars of the will may be seen at Doctors' Commons. If our memory is accurate, the sum did not exceed £10,000, either to the solicitor, apothecary, or the physician.

Crito.—We are not quite certain who christened the New College, and we have reason to suspect that neither Mr. Richard Quain, nor Dr. T. Thomson, has stood sponsors. The name, in all probability, has been chosen from the striking resemblance between the ubiquitous professor and the great Sydenham.

Erasmus.—We have reason to believe that the luminous discourses of the "modern Sydenham," will not only be delivered at THE COLLEGE in Sussex-street, THE COLLEGE in Webb-street, but also in several of the other renowned Colleges of the Metropolis.

Cyclops.—The remarks will find ready admission into a contemporary.

Paul Pry must favour us with his name confidentially.

Post Mortem ought to have known better the etiquette of the Court, and been aware that Mr. Balderson's name could not have been officially appended to the account of the post mortem examination at Windsor. When Sir Astley Cooper requires the attendance of a junior, it is entirely for his *private* accommodations, and for the purpose of securing morbid specimens.

North London Hospital.—We are unavoidably obliged to defer, an account of the fatal case of Lithotrity. For the same reason we cannot find room for the Taliacotian operation.

All communications and works for review to be forwarded, (carriage paid) to Dr. RYAN, 4, Charlotte-street, Bloomsbury-square.

THE

London Medical and Surgical Journal.

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXXII.

THERAPEUTICS.

Revulsive Remedies—Humoral pathology—Influence of the blood in inflammation—Doctrines of coction and crisis—Ubi irritatio ibi fluxus—Spontaneous influx of the blood—Natural evacuations and artificial drains—Medicines for dislodging morbific matters—Origin of blood-letting—Cholagogues and melænagogues—Herodotus, on the opinions of the ancient Egyptians—Their practice of taking emetics and purgatives every month—Opinions and practice of the Greeks and Romans—Employment of diuretics by Hipprocrates—Dr. Baynard on diaphoretics—Back doors and sally-ports of nature—Unsparing use of Epispastics—General employment of issues—Early employment of bloodletting—Universally prevalent in savage nations—Pliny, on venesection by the hippopotamus—Ancient prevalence of errhines and siatogogues—The brain a depot of phlegm—Remedies which produce no discharge—Supposed incompatibility of two irritations—Arbitrary and gratuitous doctrine of Hippocrates—Stahl, Hoffman, and Cullen, on the chimeras of humoral pathologists—Acids, alkalies, fermentations, and effervescences of the Arabians and chemical pathologists—Lentor, remora, and error loci of the iatro—mathematicians—Spontaneous accumulations, cachochomy, and spissitude of the fluids—Solidist views of inflammation—Improved notions of Belinghieri, Lubbock, Allan, and Foster—Anima of De Gorter—Archæus of Van Helmont—Cullen on spasm of the capillaries—Hunter on the seat of inflammation—The talented vagabond, John Brown—Experiments of Wilson Philip, and Hastings—Slower circulation of blood in inflamed parts—Dr. Parry on increased momentum of blood—Dr. Thomson on the capillary circulation—Bell on electrical repulsion—Pring, on capillary attraction—Vague pathology of the French school—Inflammation is really diminished action, preceded by increased action—Revulsive remedies do not act by promoting evacuations, or withdrawing stimuli—Loss of balance between the weight and the moving powers—Double character of the blood—Source of Brown's fatal error—Insane opposition to blood-letting by Erasistratus and his successors—Pernicious practice of Rasori, Tommasini, Bordu, Balfour, and Maclean—Necessity of lightening the load, as well as increasing the stimulus—Arteriotomy, leeching, cupping, scarifying, and venesection.

It is not a little remarkable that although, in the present day, we with one consent reject the notion, that any other fluid than the blood is concerned in producing inflammation; and although we have, in a great measure, discarded the doctrines of coction and crisis, we still frequently so far adopt the old axiom of "Ubi irritatio, ibi fluxus," as to speak of the accumulation of blood in an inflamed part, not as a necessary consequence of the dilated state of its capillary vessels, but as produced by a spontaneous influx of this fluid, in furtherance apparently of some definite end.

Whatever may have given rise to the humoral pathology, the almost necessary result of it was an attempt, on the part of physicians, to immitate these apparently salutary processes of nature, and to substitute artificial drains, for those spontaneous evacuations which appeared so beneficial. Hence the origin, on the one hand, of emetics, purgatives, diuretics, diaphoretics, and epispastics, as the means of directly dislodging the supposed "morbific matters," and thus obviating the

necessity of their coction and expulsion by any of the four fluids we have mentioned, blood, yellow bile, black bile, and phlegm. This likewise was the origin, on the other hand, of blood-letting, cholagogues, melænagogues, errhines, and sialogogues, as the means of evacuating a portion of these four fluids, when their preternatural accumulation, however salutary when moderate, had become excessive.

The ancient Egyptians, according to Herodotus, supposed that the elements of all diseases entered the body with the element; and from the Egyptians, the Greeks derived all the germs both of medicine and philosophy. Now it is sufficiently well known that it was a prevalent custom with the Egyptians to take emetics and purgatives every month, for three days in succession, as a preventive of diseases in general; and the use of these remedies was hardly less common among the Greeks and Romans; nor does it appear to have once entered into their heads to conceive that the advantage derived from them could be unconnected with the discharge which they occasioned.

The same thing may be said also of the notions at first entertained of diuretics, the employment of which was common with Hippocrates; and of diaphoretics, which were so much relied on, in after time, as a means of obviating inflammatory diseases; the pores of the skin being regarded (as remarked by Dr. Baynard) "as so many back-doors and sally-ports, by which nature drives out the enemy that has crept into her garrison." It was in a similar manner that the advantages of epispastic remedies were in general explained; and how unsparing were the ancient humoral pathologists in the employment of these remedies is very generally known, although they were entirely outdone in this respect by the modern sectaries of the same school In the days of Willis, it is said there were few persons who had not, on some part of their body, issues of one kind or other, which he compares to the trenches by which fenny lands are drained; and so sore an evil had the extensive use of blisters of cantharides (a short time revived by Mercurialis) become about the time of Dr. Baynard, that he ventures to surmise that "the devil himself, old Beelzebub, is nothing but *a great cantharid*, they act so according to his nature, to plague mankind wherever they are applied."

While emetics, purgatives, diuretics, diaphoretics, and epispastics were supposed to do good by obviating the necessity for accumulations of the fluids, and thus preventing inflammation, blood-letting, and the other means of immediately evacuating these fluids, were considered to be not less efficacious in controlling this accumulation and the consequent inflammation when they had become too violent. Blood-letting appears to have been one of the earliest remedies to which physicians had recourse in the cure of inflammatory diseases; nor is there any nation in modern times, however savage, which does not employ it in one form or other. It is said by Pliny to have been suggested by the example of the hippopotamus, which is reported to open a vein with its teeth, as often as it finds itself indisposed. No doubt, however, mankind was first prompted to its use by the benefit observed to arise in inflammatory affections from spontaneous hæmorrhages. Of blood-letting, however, it is not necessary to say anything further in this place; since, though formerly undistinguished from the other evacuant remedies, it is not commonly included, in modern times, among the remedies called revulsive; and since the benefit derived from it is without doubt, really dependent chiefly on the evacuation produced.

The last head of evacuant medicines, the introduction of which requires to be mentioned, is that of errhines and sialogogues; for the chologogues and melænagogues were inseparably connected with purgatives, of which we have already treated. How liberal was the employment of errhines and sialogogues in ancient times must be well known to all who are familiar with the writings of Hippocrates, as well as with how much consistency they were prescribed by the ancient physicians, who, of course, always looked upon them in the light of evacuants alone. The nostrils and mouth were formerly considered as the natural emunctories of the brain,—the great depôt of the phlegm of the body; and fluxes of phlegm from this organ were looked upon as the cause, not only of catarrh and ptyalism, but of laryngitis, bronchitis, tubercles of the lungs, anasarca, rheumatism, and gout. Hence it followed, that whatever produced a discharge of mucus or saliva, would be a powerful means of relieving any one of the diseases in question.

We have hitherto spoken only of those remedies for inflammation which were introduced in order to effect artificially that which when natural seemed

advantageous, and the chief or sole beneficial action of which, was almost universally attributed to the discharges which they occasioned. But it was soon found that some remedies which give rise to no sensible evacuation at all (particularly those applied to the surface of the body) were of equal service in inflammatory diseases, to whatever causes the *introduction* of these remedies might have been owing. It became necessary, therefore, to frame a specific law in order to meet this emergency, and it was accordingly enacted, by "the father of medicine," that if two irritations are set up in the body at the same time, the stronger will overcome the weaker. This doctrine, arbitrary and gratuitous as it certainly is, and altogether false, as there is every reason to believe it to be, it has been received since the time of Hippocrates, almost unquestioned; and so long as inflammation was believed to consist in increased, and not in diminished irritation (as was the case till very lately) it was no doubt a very convenient doctrine, and if it did not really explain anything, it answered at least all the purposes of an explanation.

We owe it to Stahl, Hoffmann, and Cullen, that the chimeras of the ancient humoral pathologists, modified as they were by the acids and alkalies, the fermentations and effervescences of the Arabians and their progeny, the earlier chemists, and by the lentor, the remora, and the error loci of the iatro-mathematicians, were at length rejected in favour of the doctrine that inflammation, the "head and front" of most diseases, arose not from a spontaneous accumulation, a cacochomy, or a spissitude of the fluids, but from some preternatural affection of the solids of the body. And not less do we owe it to Vacca Berlinghieri, Lubbock, Allan, and Foster, supported recently by Wilson Phillip, and Hastings, that the notions of Stahl, Hoffmann, and Cullen, modified as they were by John Hunter, have been corrected in their turn. It is only within these few years that the persuasion, for a long time universal, that inflammation consisted in increased irritation or action of the vessels affected, has been very generally superseded by the opinion that, in this state, the affected vessels are acting below par, and that it is on this account alone that the blood becomes accumulated in them.

According to Stahl, and his pupil De Gorter, it was an increased muscular contraction of the capillary arteries, operating by forcing too much blood into the vessels immediately beyond them, that constituted inflammation. This increased muscular action was excited by the supposed anima, which was a lineal descendant of Van Helmont's archæus; as the latter was of the πυρ, αυδις, &c., of the ancients. Hoffman and Cullen, equally with Stahl and De Gorter, attributed inflammation to increased muscular contraction, or spasm of these capillary arteries; but, differing from them, they imagined that this spasm, while it excluded the blood from the vessels immediately beyond them, produced inflammation by occasioning an accumulation of it in the vessels on the opposite side. It was observed, however, by John Hunter, that capillary arteries themselves, and not the vessels on either the distal or the proximal side of them were the immediate seat of inflammation. He could not conceive that the effect of increased muscular contraction of these vessels, could be that of overloading them; and yet he was unwilling to resign the notion of an increased action of some kind or other. He was therefore obliged to presume that in inflammation, their elasticity or active tendency to expand, more than counterbalanced their muscular contractibility, or active tendency to contract; and thus actively produced that dilatation and accumulation of blood which constituted this state.

Perhaps it was John Brown—the vagabond and despised, but talented, John Brown—who was the first to suggest the doctrine, that a diminished power of any kind of action, in the capillary arteries, as necessarily followed any inordinate exertion of this power, as fatigue of the voluntary muscles followed any unusual exercise; and that as all the positive exciting causes of inflammation operated in calling forth this inordinate exertion, a necessary consequence was, that the fatigued capillary arteries subsequently acted too little, and thus did not actively produce, but passively allowed, of such an accumulation of blood in them, as established the state in question. This theory—for in Brown's hands it was a mere theory—has since been amply corroborated, and it may be almost said proved, by the reasonings of Vacca Berlinghieri, and the other authors above mentioned, particularly Wilson Philip and Hastings. By a series of well-conducted experiments on the intestines of rabbits, the web of the feet of frogs, and the fins of fishes, it was satisfactorily shown by these pathologists, that inflammation (always understanding

by this term, the condition of a part indicated by "rubor, tumor, calor, and dolor"), was at all times to be induced by diminishing the irritation or action of the capillary arteries, and relieved by increasing it. It was also proved that, from the greater quantity of blood contained in these capillary arteries in a state of inflammation, they absolutely transmitted, in a given time, precisely as much blood as in health; the flow of blood through them was, from their increased calibre, necessarily slower than natural. This view of inflammation has accordingly, of late years, been pretty generally adopted; notwithstanding that some celebrated authors (as Dr. Parry) have contended that "an increased momentum of the blood in a part, is essential to local inflammation;" and others (as Dr. Thomson) have endeavoured to show that "inflammation is sometimes attended by an increased, and at others by a diminished velocity of the circulation through the capillary arteries." Nor has this view of inflammation been modified, in any considerable degree, by the notion of Mr. Bell, that a part of the phenomena of inflammation may depend upon a want of electrical repulsion between the vessels and their contents; or that of Dr. Pring, that it may arise from a power of attraction exercised by the capillary arteries. The latter hypothesis, indeed, seems to be little more than a renewal, in another form, of the notions of Hunter, and to have been invented chiefly for the purpose of rendering a little more tangible, the doctrines of the old "fluxus" school, formerly alluded to, and still so vaguely followed by many of the French pathologists, who continue to speak of a "concentric afflux of the fluids," and a "more considerable determination of the fluids," as if the dilatation of the capillary arteries were the consequence of this influx, instead of this influx being the result of their dilatation.

From what has been said we may consider it as proved, or at least as rendered highly probably, that inflammation (as indicated by redness, swelling, heat, and pain) essentially consists in an incapacity in the affected vessels (owing to their diminished irritation or action), to transmit, in a natural manner, the blood which they receive. As, however, this diminished action of the capillary arteries, has always been preceded by a proportionately increased action, of which it is the consequence, we may, if we please, consider the latter (as is habitually done by some pathologists) as constituting the first stage of inflammation. Hence we may still speak of inflammation, in one stage at least, as a stage of increased irritation. This we may do with no less propriety than we describe a fever as including the cold stage (or that of oppression), as well as the hot stage (or that of excitement). This, however, is a mere logomachia, and turns altogether on the definition which we choose to give of inflammation; a state which if we consider it (as is almost universally done) to be essentially indicated by redness, swelling, heat, and pain, is manifestly to be referred to *diminished* irritation, however *increased* may have been the irritation by which it was preceded. It is also to be borne in mind, that the increased action of the heart, and the violent febrile symptoms, which are usually attendant on any considerable inflammation, render it extremely difficult to divest the mind of a certain association between increased action and inflammation; and it was probably this constant concatenation of increased *general*, with diminished *local*, action (the former of which is much more easy to be recognized than the latter), that first gave rise to the idea that inflammation consisted in increased action. The real question, however, is what is the condition of the immediately inflamed part, and not what is the condition of the rest of the body, when any considerable part of it is in a state of inflammation. It may easily be conceived that the local affection may be that of preternatural collapse, while the general affection is that of excessive excitement; nor would it perhaps be difficult to explain how these two states are not only compatible, but in the relation of cause and effect to each other, It is not, necessary however, to prosecute the subject further.

If then, the modern explanation of the proximate cause of inflammation, be not only different from those formerly adopted, but diametrically opposite to them, it is evidently impossible that the explanation of the manner in which the remedies of inflammation operate, can be the same. The notion can be no longer tenable, that revulsive remedies operate, on the one hand, by promoting evacuations, or, on the other, by withdrawing stimuli. It must have been apparent, from the foregoing remarks, that inflammation consists chiefly in a loss of balance between the weight to be moved, and the powers destined to move it; and it must be equally obvious, that the only means of relieving this state must be such as are calculated

to restore this balance, either by removing a portion of the superabundant weight, or by adding to the deficient moving powers. The only remedy which directly fulfils the former of these indications, is blood-letting; and it is pretty certain that this remedy is only or chiefly beneficial from the evacuation which attends it. It is often not sufficiently considered, that the blood, in relation to the vessels which contain it, sustains the double and, in some respect, opposite characters of a load and a stimulus. In the former character the blood tends to oppress the vessels; but the latter it excites them to relieve themselves from such oppression. It appears to have been from regarding the blood in the character of a stimulus only, that poor Brown was led into the fatal error of decrying blood-letting in inflammatory diseases. The insane opposition to blood-letting by other authors, from Erasistratus to Van Helmont, is unworthy of being remembered. The pernicious practice to which this determination by Brown gave rise, has probably, in his hands, and those of his followers (such as Rasori, Tommasini, Borda, Bal four, and Maclean), slain its thousands and tens of thousands, and has branded the name of Brown with an opprobrium, by the sweeping vortex of which his real merits have been almost overwhelmed. If a porter be oppressed by his burden, the most direct and effectual means of relieving him, is unquestionably to take from him part of his load. This is precisely what we do by blood-letting in inflammation. It is done directly when the abstraction of blood is by arteriotomy, leeching, cupping, or scarifying; and indirectly (that is, through the medium of the heart) when it is by venesection. The general inadequacy of all other remedies to remove violent inflammation, till blood letting has been premised, might have been reasonably anticipated from a knowledge of the real nature of inflammation; just as no means short of diminishing the load, would enable a porter to carry a burden to which his physical strength was incompetent.

But when the requisite portion of this burden has been removed, what is the most feasible means of facilitating the conveyance of the remainder? Undoubtedly that of adding energy to those powers by which this conveyance is to be effected. This is to be done, in the case of inflammation, by employing remedies which are either immediately or intermediately stimulant. When the inflammation is seated in a superficial part (as in the case of ophthalmia, cynanche tonsillaris, or erythema), the local applications which are commonly resorted to, and which are found most beneficial, are such as (in the form of collyria, gargles, and lotions) immediately irritate the dilated arteries, and thus promote their action; and in inflammation of a deep-seated part, some of the most efficacious local remedies (such as calomel, electricity, and acupuncture) operate manifestly as direct and powerful stimulants. That such is the action of caloric in all its forms, from ignited moxa down to the simplest fomentations, can hardly be doubted; in spite of the ingenious surmise of Baron Larrey, that the benefit occurring from moxa is owing to the evolution of a something,—"a very active volatile principle,"—during the combustion of the substance employed. Such a suggestion displays exceedingly well the infinite vagueness, with which the action of remedies directly stimulant, has been usually attempted to be explained. Their actions could not be easily recognized with the theories already in vogue with respect to the action of remedies reputedly revulsive, but in reality indirectly stimulant (either that they effected an evacuation, or abstracted a stimulus); but nevertheless, there was an unwillingness to oppose those theories. Had they been abandoned, however, in favour of the simple views we have enforced, the action of moxa, as well as of the other remedies in question, would have been explained in a manner at once consistent and satisfactory.

LECTURES ON SURGERY.

By John Hunter, F.R.S.

OF SEDATIVES AND STIMULANTS.

Perhaps there is no idea of any principle, simply as an idea, more correct than that conveyed by the word sedative, stimulus, irritation; yet I think it is probable that there is no idea so little understood in practice; and it may be a very difficult task, and next to an impossibility, to say what real state the body or part is in, or can be brought into, or be affected in either one or the other way. This arises from our imperfect knowledge of the true state of the body or parts, or of their œconomy; for what might act as a sedative at one time, might be a stimulant at another, or even an irritant; or

what might be a sedative to one part, might be either a stimulant or irritant to another, which we shall see to be really the case, for whatever will excite action, even the common action of parts, will be a stimulus, and whatever will excite actions beyond the real strength of the body will be an irritant; and this cause of excitement beyond the common action may be no more than what at another time would act as a sedative.

For example, without heat, probably no action could take place either in common vegetable or animal matter. Heat admits of becoming an exciter to action; but as heat, in so far as it can, only excites natural actions, and, in due proportion to the strength of the parts, it may be called sedative; for we may suppose that by sedative is not meant an unnatural reduction of action, (for which, indeed, we have no expression,) but the production of a natural action from too great an action. It may increase or diminish action, according to circumstances. But to ascertain the precise degree of heat suitable to every state of body or part, so as neither to increase nor diminish action, is probably impossible.

When animals are extremely weak, their actions should be suitable to their strength. Or if an animal is only moderately weak in the whole, considered as a whole, yet there will be parts that will be very weak, and if those parts are under disease, care should be taken that those parts are not thrown into action above their strength.

The temperature of the body, or parts respecting heat and cold, should be in proportion to this weakness, which will regulate the action, and to apply warmth at such time would be applying a stimulus; and if the body was still more reduced, warmth might become an irritant; or if the body was not able to act up to this stimulus, it would be an irritant.

To lower actions suitable to the state of the constitution, whatever this may be is the use of a sedative; but in some constitutions it may be requisite to bring it even lower. So it is often necessary to produce fainting; but this cannot be called a sedative; it is probably only weakening.

Irritability.—There is no word perhaps more improperly applied than irriability; it is often used for stimulus, and stimulus often used in place of it. ndeed we must allow that there is a resemblance between them in several of their properties, both exciting actions of the living parts; but they differ very much in the consequent action, as, indeed, irratibility appears to be nearly allied to susceptibility.

I have already explained, when on the œconomy, that stimulus excites or increases natural actions; but an irritation either excites an unnatural quantity of a natural action, or an entire new one; and susceptibility is the readiness with which they can be excited.

Some constitutions are so easily excited or, in other words, so susceptible of diseased impression, as to take up actions so readily as to make them appear natural, which in others are only brought on by disease. That a natural action may be increased beyond its natural bounds we see every day. Salivation is an instance of this. That irritation produces new action is perhaps more evident than the former. Accidents of all kinds are of this kind. Blisters act on this principle. In short, every new action which takes place may be said to arise from an irritation produced in the part, or something similar. Irritations are often producing salutary effects, and therefore may be said to terminate in a stimulus, which is owing to a kind of irritation, such as those which are in consequence of many accidents, which new action produces a restoration of the part injured, as in wounds, compound fractures, &c.

There are new modes of action taking place every day that would appear to arise spontaneously (therefore from no possible irritating cause, which, on the contrary, most probably arises from this new mode of action). The immediate cause may be so slight as hardly to approach to an irritation. Such constitutions are called irritable, which is only saying that one part may be irritated by what would have no effect on another. Those unnatural spontaneous actions often arise from a want of power to act properly, with a strong disposition to action, which is the reason why weakness, or want of power, becomes the cause of irritation, which produces new action, which new action will be according to this want of power and the nature of the part combined.

Necessity often becomes the cause of irritation, as when a small opening is made into a large cavity, and not allowed to heal by the first intention, the whole becomes under the necessity of taking on a new action to restore the whole; therefore irritation often produces salutary effects.

Many of the preternatural actions are so slow in their motions that we can hardly make them accord with our ideas, which ascribe them to irritation, especially in those that seem to arise spontaneously, as the formation of many wens, encysted tumours, &c.

Irritation may be divided into common, specific, and poisonous: 1st, Common, is that which will affect all animals; 2nd, That which will affect only the same species; 3rd, Is also very much confined to species; one only, as far as I know, being excepted,—the bite of a mad dog. So that the disease of one animal, although communicable to another of the same species, is not so to one of another species. Smallpox, chickenpox, venereal disease, measles, hooping-cough, jail-distemper, itch, scrofula, are peculiar to the human. The disease of black cattle is confined to them; the rot to sheep; glanders to horses; mange to dogs.

OF SYMPATHY.

I have endeavoured to show that there are two principles in the higher animals, namely, life and the action of the nerves, which last is called sensation and volition; or rather, perhaps, there is but one principle, life, which becomes the basis of the other and of every action of the body. I also endeavoured to point out that sensation arose from feelings in the mind, which produce action in the body. I attempted to show that the more simple actions arose independently of sensation or the actions of the nerves; that the nerves, from their specific actions, only become the cause of many actions, but are not the principle of those actions; that from their termination in the brain they produce sensations there from which is formed mind, and that they also give rise to the will, and form the basis of reasoning. I showed that the mind becomes the cause of many involuntary actions in the body, as reason becomes the cause of the voluntary; and that thus the actions of life, of the nerves, of the mind, and of the will arise from impressions being made on each so as to affect their principles.

In speaking of the general principles of disease, I divided the living power into susceptibility of impression, impression, dispositions arising in consequence of such, and action consequent on disposition; all which I observed were immediate or primary. But there is a secondary susceptibility, disposition, and action arising from, or in consequence of, all, by necessity, called sympathy; actions, as it were, playing amongst themselves, each becoming a stimulant to the other, or each being affected by the other.

By this principle of action, called sympathy, an action arises without an immediate impression in a secondary way, either acting in conjunction with the part immediately impressed, or taking the whole action on itself. This action without immediate impression is one of the most complicated principles in the animal body, especially the more complicated animals, because it is the compounding of actions.

Sympathy may be divided into two species: 1st, A local with a local disease; 2nd, A universal with a local. The first may be called local sympathy; the second universal. But all sympathies must arise from a local cause. Sympathy is not confined to the same actions of the same person, but it is transferable from one person to another.

In the investigation of this subject, we shall find all the principles of action in an animal, even in the most complicated, have a connexion with one another; for instance, the living principle, the action of the nerves, and the mind: and that the same principle in one part shall be affected by the same principle in another; and this is the simplest kind of sympathy I can conceive. Thus, the living principle of one part sympathises with the actions of life in another part, as must be the case in all animals which have no nerves. The nerves of one part sympathize with the actions of the nerves in another, which may produce sensation. The mind sympathizes with the mind, which of course can only take place in animals that have mind, and perhaps not in all of them; and it is more than probable that such minds as are capable of sympathy are capable of other complications of affections. Probably what might be called the disposition to action of one principle in one part may produce action of another principle in another part. Thus sensation in another part may be produced, while simple life only is affected in the part immediately impressed. This would appear to be owing to the nature of the sympathizing part. Thus, if an injection is thrown into the urethra in a man, it shall not give pain in the urethra, not even the common sensation of the part, yet the stomach shall be affected and sickness produced, which last is a sensation. I have known a stimulus in the rectum, which did not produce pain in

the part, produce sickness and pain in the small intestines, and even stop digestion. Such pain certainly arises from action in the part. On the contrary, simple pain in the finger shall produce a greater action of the living principle in another part, as making the heart beat oftener.

The principle of sympathy itself I shall call a genus, of which the above make three species, namely, sympathy of the actions of life, of the nerves, and of the mind. Each of these have their varieties in action, each being susceptible of varieties of impressions, affections, and actions, and all being capable of sympathizing with one another.

It may admit of dispute, and probably will be difficult to settle, whether there is sympathy between sensation and sensation simply; for sensation must arise from some impression made on a part, or some action of nerves similar to those arising from impression. Therefore every sympathy which only produces sensation must still arise from impression on, or action of, the nerves; and the same with the sensation in the sympathizing part. Sensation is only the natural consequence of such action, for sensation is only the intelligence of action, either from impression or arising from the spontaneous action of the nerve itself.

I suspect that all those which would appear to be sympathies of sensation only without action, are a delusion of the mind, a wrong reference of the mind to some other than the part affected, which I shall explain when upon the subject of delusion.

From what has been said above, it must appear that sympathy is a principle in animal bodies so intimately connected with every possible impression, affection, and action, that we cannot have a proper conception of the animal œconomy respecting diseases without taking this principle into consideration. It is one of the secondary principles when applied to the body itself, being the effect of some impression, affection, or action in some other part of the same body. Sympathy arises from every part of the body being ready to fall into affections and actions in consequence of an impression, affection, or action having taken place in some other part. Sympathy is one part taking part in the impressions, affections, and actions of another part.

Sympathy is not confined to actions of the same persons amongst themselves, but it is transferable from one person to another, in whom it cannot be called a secondary action, as it arises from an impression being made on some of the senses.

Yawning is a species of sympathy; and all actions peculiar to country, places, family, &c., are so many sympathies. Dancing may be included among the sympathies, for it is not simply an imitative action arising from the will, but it is an irresistible impulse arising from a state of mind produced from musical sonnds. If there were no sounds, or, in other words, not a sense of hearing, there would be no dancing; for seeing would not produce it, probably rather retard it. There is, first, sensation; then a state of mind formed in consequence of that sensation; and then the action of the limbs excited by that sensation.

The idea of sympathy may be stated differently: instead of saying a part sympathizes with another, we may say one part under stimulus or irritation is capable of stimulating another part of the same body into sensation, action, &c., which I think is the most natural idea or position.

Sympathy may be divided into two kinds, the natural and the diseased. The diseased is when sound parts sympathize with the diseased, and probably the diseased with the diseased, which is what I mean to explain.

The sympathy of one diseased part with the diseases of another part will include the idea of revulsion, as revulsion consists in the production of a disease in one part to cure a disease in another part; which shows that this one part, while under disease, can be affected by a diseased action being produced in another part, or the cessation of one action in consequence of another having taken place in another part.

Natural sympathy takes place more readily, and its actions are more strongly marked, in proportion as the powers of the machine are capable of repairing an injury received. On the other hand, it takes place more slowly, and is less evident, as the powers of life are more languid.

In many diseased states the condition of the whole body is often such that it more readily falls into sympathy at one time than at others. Thus we find people at particular periods much affected by slight causes, while at other times considerable mischief received will hardly affect them.

Some people are naturally more rea-

dily affected than others, as will be evident in disease.

Sympathy sometimes proves fatal, as in children from teething. But this depends in great measure on the parts sympathizing, or the number of parts that sympathize.

Sympathies are often not reciprocal: the liver never sympathizes with the shoulder, nor the urethra with the testis; nor when the glans penis is affected does any irritation pass to the bladder: but often they are, as, for example, between the head and the stomach.

Sympathies are generally simple; we hardly ever find two parts sympathizing with the same cause: however the spasmodic convulsion of both hands, or hands and feet, &c., as sometimes takes place, may be called a double sympathy.

Sympathy is common and uncommon. The first is where it takes place more readily between some parts than it does between others, as between the stomach and head, the stomach and the skin, the testes and the urethra. Sympathy may be called uncommon when parts sympathize with diseased parts that were never known to sympathize in health.

A gentleman had a sore on the inside of his thigh, which itched so intolerably that he could not avoid scratching it, and when he did, it always produced tightness in his chest and shortness of breathing, which he never had but at these times.

Lord Cavendish's father always felt pain in the left arm from a stone in the bladder. This pain was the only indication of a want to make water.

Sympathies are either similar to the cause or dissimilar. The similar can be but of two kinds: where the modes of affection or action of the sympathizer are either wholly similar to the modes of affection or action of the parts diseased, or the sympathizer has one of its modes of affection or action similar, and which is the one that sympathizes. Dissimilar sympathy may be of so many kinds that it is probably hardly possible to be completely master of the whole of the particular varieties.

Sympathy may be said to be either partial or universal. Sympathy is partial, from local diseases, when the causes of action in one part become the cause of action in a distant part, as when anything tickles the nose the muscles of respiration act; or it may be partial from a universal disease. But local sympathy with the constitution has its order of parts, as the stomach sympathizes with the whole body in an incipient fever.

Sympathy is either natural or diseased. Natural sympathy always tends to produce some salutary purpose, as the breasts of women increasing with the size of the uterus during gestation.

As no part of the body is entirely independent of the rest, in all particular injuries the whole must sympathize more or less; but as every individual part has a more intimate connexion with some particular part than with others, these parts sympathize more readily.

Local or partial sympathies we call continuous, contiguous, or remote. Continuous is only an extension of the same action, as in most inflammations spreading from the centre; otherwise, in an injury, the part which received the first impression would alone become inflamed. Contiguous is where one part sympathizes with another where the parts are only in contact with each other, without any continuity of parts, as the contents of the abdomen with the abdominal muscles. Remote is where one part sympathizes with another part, though at some distance from it.

Universal sympathy is when the whole becomes affected in consequence of a local disease, and is of two kinds. One is where every part of the body sympathizes with any one part stimulated, as the sympathetic fever in consequence of local inflammation, as also eating substances that disagree with the stomach, convulsions from worms, teething, &c.; or, secondly, where particular parts, being stimulated, more readily produce universal sympathy than any other.

Constitutional sympathy may arise in many cases from local sympathy, and not from the effect of the first injured part. This is very remarkable when the sympathizing part is a vital part, though the first injured part be not vital. If the stomach sympathizes strongly with any part of the body, this sympathy of the stomach produces a morbid state of the constitution.

In universal sympathy there appear three stages, but all equally belonging to this principle: 1st, inflammatory fever; 2nd, hectic fever; 3rd, dissolution. These take their rise from the different stages of the local disease. There may be marked a fourth, which may be called nervous, spasmodic, or hysteric; but this is not particular to any one of the states of the local disease from which the others arise, but from peculiarity of constitution,

and sometimes it exists when the others do not.

Local or partial sympathy is found more in old than in young; whereas universal sympathy is more in young than in old. Sympathy is less determined in young persons, every part being then ready to sympathize with other parts under disease. This is remarkable in the teething of children, for in them universal sympathy seems the first mode of sympathy arising from local irritation.

When a local disease takes place in a part when the patient is very young, it is capable of giving a general disposition to sympathize, by which means symptoms become more uncertain than in those of more advanced age, often putting on the appearances of a great variety of diseases.

As the child advances, the power of sympathy becomes partial, their not being now in the constitution that universal consent of parts, but some part, which has greater sympathy than the rest, falls into the whole irritation; therefore the whole disposition to sympathy is directed to some particular part. The different organs acquire more and more of their own independent actions as the child grows older.

We find in children the symptoms from sympathy often more violent than those of the parts affected. In adults when cutting teeth there is only an affection of the part, or only a continued sympathy, that is a swelling of the cheek, &c. In adults the pain is often very great, but in children the pain is little, and the action of the part moderate, but the action in the sympathizing parts is very great, namely, in the voluntary muscles.

OBSERVATIONS ON EXTRACTION AND DISPLACEMENT OF THE CATARACT,

WITH TABLES SHOWING THE RELATIVE SUCCESS OF THESE OPERATIONS.

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[The following observations have appeared to us so judicious, and the facts contained in them are of such importance, and detailed with such a character of veracity, that we have much satisfaction in placing the whole memoir before our readers.—Eds.]

There are three distinct modes of operation by which cataract may be cured.

1st. By *Division*, or the breaking down of the opaque lens, so that it may be acted upon by the aqueous humour, dissolved, and by absorption removed from the eye.

2d. By *Extraction*, or the complete removal of the opaque lens from the eye, through an incision made in the cornea.

3d. By *Displacement*, or the removal of the opaque lens from the axis of vision, but still leaving it within the eye.

It is almost universally admitted, that when the cataract is of soft consistence, so that it may be broken with with facility into fragments, or so fluid that it may be diffused through the aqueous humour, the operation of *division* should be resorted to, as inflicting comparatively little injury on the organ, and effecting a perfect and permanent cure, the lens being just as completely removed as it could be by the operation of *extraction*, and at infinitely less risk.

It is only generally admitted that, in numerous cases of hard cataract, the operation of *extraction* cannot be resorted to, and other operations must be adopted for its removal from the axis of vision, as in the following circumstances, viz.

1. When the section of the cornea could not be completed without wounding the iris, in consequence of the cornea being unnaturally flat, the iris unusually convex, or when adhesions exist between the iris and cornea.

2. When there exists a diseased condition of the cornea, that would be likely to interfere with the speedy closure of the incision, or would render that part peculiarly liable to inflammation if wounded.

2. When adhesions exist between the margin of iris and capsule of the lens, preventing the free dilatation of the pupil, or when the pupil is small and not dilatable to such an extent as would admit freely of the passage of the lens, whether this condition of the iris arise from natural conformation, or from its component fibres having been agglutinated and rendered immoveable by the interstitial deposition of lymph.

4. When there is what is commonly termed "a fluid or disorganized condition of the vitreous humour;" that is, when the cells of the hyaloid membrane exist. In such a case, were an incision made in the cornea of sufficient size to admit of the passage of the lens, through the same incision the whole of the vitreous humour would escape, and the eye sink

in the socket. Such an accident I have witnessed in the hands of a skilful operator conversant with diseases of the eye. It is also evident, that when the vitreous humour is in a fluid state, and an incision made in the cornea, that the slightest contraction of the muscles of the eye or eyelids would cause its escape.

5. When there is eversion or inversion of the ciliæ or palpebræ, either of which conditions would interfere with the closures of the wound in the cornea.

6. When the patient is extremely nervous, irritable, or timid, and deficient in self-command. In these circumstances, not only are the different steps of the operation rendered extremely difficult and embarrassing to the operator, and hazardous to the patient, but an involuntary contraction of the muscles of the eyeball, after the section of the cornea has been completed, has in many instances emptied the eyeball of its contents. To show the difficulties that may arise from this cause, I may mention the case in which I extracted a cystocercus from the eye of a girl eight years of age. The section of the cornea was made without difficulty, and in a perfect manner, but no inducement could make the girl again open the eyelids. To use force was out of the question. Indeed, the mere involuntary contraction of the muscles of the eyeball, forced out the animalcule, and along with it the lens, without my having even attempted to open the eyelids. Had any such attempt been made I have not the least doubt that the vitreous humour also would have been discharged, and all hope of vision irrecoverably lost; as it was, the iris partially protruded, and adhered to the cornea, diminishing the size and altering the form of the pupil. The sight is rendered still further imperfect from subsequent opacity of the capsule of the lens. This may, however, be in a great measure remediable by operation, should it at any future period be rendered expedient.

In all cases, therefore, of soft or fluid cataract, or when any of the above-mentioned objections to the operation of *extraction* are present, the needle must be employed.

But a most important question remains to be solved, viz. whether a hard cataract, when none of the obstacles alluded to are present, ought to be *extracted* or *displaced*. On each side of the question, we find ranged the names of the most distinguished in our profession, so that we cannot settle the point by referring to authorities. It may be expedient, therefore, to compare the advantages and disadvantages attendant upon each mode of operating, and the relative success which has resulted in so far as that can be ascertained.

The operation of *extraction* has almost invariably been performed nearly in the same manner, viz. by making a semicircular incision through the cornea, by which the opaque lens is removed from the eye.

On the other hand, the operation by displacement is performed either by entering the needle through the cornea, or through the sclerotic, also by *depression*, that is, pushing the lens perpendicularly downwards, or by *reclination* as it is termed, by which the lens is imbedded in the vitreous humour, with its anterior surface turned upwards, and its upper edge backwards.

It is evident, that before we can compare the operations of *extraction* and *displacement*, it is necessary that we should determine in what mode the latter ought to be performed.

In the first place, it appears to me that the needle should be invariably entered through the sclerotic.

The following objections may be stated to the passing the needle through the cornea, or the operation of *keratonyxis*, as it is termed.

1st. If inflammation follow, it is most apt to occur in the wounded part, and may destroy the transparency of the cornea, which is essential to vision.

2d. From the edges of the wound in the cornea forming the fulcrum on which the needle is moved in its different motions, and from its not being a simple incised wound, it is apt not to close immediately, consequently the aqueous humour drains out, the iris is thereby brought in contact with the wound, to which it may adhere, and render the pupil permanently distorted.

3d. The margin of the iris impedes the motions of the needle; besides, from the pressure made upon this membrane, in the act of displacing the cataract, it has become paralyzed, in every instance in which I have seen this operation performed.

4th. The needle being entered through the cornea, it is almost impossible to displace the lens, except in the direction of the iris, and ciliary processes, by which disorganizing inflammation o the eye is

almost certain of being excited. The point of the needle is also apt to come in contact with and lacerate the retina.

5th. The needle can scarcely be made to avoid transfixing or splitting the lens, being entered almost at a right angle to that body, so that if the lens be of a firm or glutinous consistence, it will adhere tenaciously to the needle, and in the attempts to disengage it, either the vitreous humour will be broken up and poached, or the iris will be pressed between the lens and cornea in withdrawing the needle from the eye, and the operation be left not only unfinished, but the eye in a most dangerous condition.

6th. The hand of the operator intervenes between his eye and that of the patient; he cannot therefore distintly follow the movements of the needle, or of the cataract, and particularly at the moment when, to *displace* the latter, it is necessary to raise the hand.

These objections appear to me sufficienly strong to forbid the introduction of the needle through the cornea in *displacement*, more especially as I am not aware of any advantage that can result of any importance.

The operation is not so objectionable for the purpose of breaking down a soft cataract, although by no means so advantageous as that through the sclerotic.

Depression.—In the operation of *depression*, the opaque lens is supposed to be pushed perpendicularly downwards, till its upper edge has passed below the margin of the pupil, so that it may no longer interrupt the admission of light into the interior of the eye.

On examining the relative diameter of this part of the eye into which the lens is supposed to be *depressed*, and that of the lens, it will at once be apparent that such an operation is impracticable. In fact, before the upper edge of the lens can be made to descend below the margin of the pupil, its lower edge must have come in contact with the coats of the eye, and if it be be attempted still farther to depress the lens, its lower edge will glide towards the back part to the eye, and the upper be directed against the posterior part of the iris, the retina and choroid being at the same time ruffled and injured, or perhaps the lens may even be forced through the substance of these membranes. Indeed Daviel says, that he has found, on dissection, the lens placed between the retina and choroid, and these two membranes torn in several places.

It is evident, therefore, that by *depression*, the lens will be imperfectly imbeded in the vitreous humour; part of it being situated in the posterior chamber of the aqueous humour, it will consequently be apt to reascend. It is also evident that injurious pressure will be made on the iris, retina, and choroid, and inflammation, or total destruction of the functions of the organ may be the consequence.

For these reasons, the operation of displacement by *depression* ought not to be attempted, and is always, and in all circumstances, unwarrantable.

We have now to decide whether, in a case of hard cataract, the operation of *reclination* or that of *extraction* is to be chosen.

To determine this point it will be necessary to consider the advantages and disadvantages attendant upon each mode of operating.

Extraction.—In *Extraction*, the wound in the cornea must be sufficiently large to admit of the easy removal of the lens. In making this incision the iris is apt to bulge under the edge of the knife, from which position in many cases it cannot ue extricated, so that we must either relinquish the operation for the time, cut through the iris, or enlarge the incision by scissors, after withdrawing the cataract knife. By any of these proceedings much injury is done to the organ, and violent inflammation is liable to follow.

If the cataract knife be not well tempered, and its point very sharp, or if the cornea be unusually hard, the point of the knife, instead of transfixing the cornea, bends towards the iris, so that the operation cannot be completed without a change of instruments, by which, also, the organ is apt to be injured, and the danger of subsequent inflammation increased.

The incision in the cornea being completed, if pressure be made on the eye, or if the muscles of the eyeball contract powerfully, the whole, or part of the vitreous humour, may be discharged. If the whole, the sight is irrecoverably lost—if a part, hyaloid membrane, in the cells of which the vitreous humour is contained, necessarily intervenes between the lips of the incision in the cornea, preventing or retarding their union. Attempts to replace the hyaloid membrane by the probe cnmmonly call into action the muscles of the eyeball, by which a still greater portion is protruded.

I have seen the whole vitreous humour escape on the completion of the incision through the cornea, in consequence of undue pressure on the eyeball—of spasmodic contraction of its muscles, also from a disorganized state of the cells containing this humour. In each case, it was followed by total loss of the eyeball from the inflammation which followed. Such are the accidents which are apt to occur during the performance of *extraction* even by the best operators, some of which cannot be avoided by any degree of care or skill on the part of the surgeon.

Even when none of the above accidents occur during the performance of the operation, still, so severe an injury as the eye necessarily sustains, is usually followed by violent inflammation, which is indeed the most frequent cause of the failures in *extraction*. When the inflammation is severe, the incision in the cornea does not heal, the lips gape, and the iris protrudes. If it be subdued at this period, a large and unseemly cicatrix, and irregular or obliterated pupil is the result, with a greater or less injury to the sight. If the inflammation proceed, suppuration and destruction of the organ is the consequence. In some instances, inflammation of the sclerotic and iris takes place, followed by effusion of lymph, and obliteration of the pupil. *Amaurosis* may also occur, either as the immediate effect of the injury inflicted during the operation, or of the subsequent inflammation. "It very rarely happens," says Dr. Mackenzie, "that this operation is not followed by such a degree of inflammation in one or other of the textures of the eye, as to require the abstraction of blood from the system. So well established is this observation, that some make it a general rule to bleed the patient in the arm in the course of the first twenty-four hours after the operation, whether pain is complained of or not."

In so hazardous a state is the eye placed by this operation, independent of the risks already mentioned, that "the patient must be put to bed with as little movement of the head and body as possible. A careful assistant or experienced nurse sitting confidently by the bed side for forty-eight hours, or even for several succeeding nights, or attentively to watch the patient when he wakes, taking care especially that he does not turn suddenly round upon the eye which has been cut, or put up his hand to rub the eye. If there is any particular reason to dread the latter accident, it may be proper to muffle the patient's hands, and pin them down by his sides."

Such are the accidents which are apt to occur from the operation of *extraction* of the cataract. It is admitted, that, if the patient escape all these dangers, his sight will be as perfect as it is possible to be, after the removal of the lens.

Reclination.—In the performance of *Reclination* through the sclerotic, the following parts must necessarily be wounded, viz., the conjunctiva, sclerotic, choroid and vitreous humour; but it is not contended by the advocates for *extraction*, that any permanent bad consequences can result from this part of the operation; nay, it is admitted that the injury inflicted is altogether trifling in comparision with that caused in the operation of extraction.

It is objected to the introduction of the needle through the sclerotic, that the long ciliary artery or the ciliary processes may be wounded, and blood thereby effused into the chambers of the aqueous humour, obstructing the view of the cataract and of the needle, and thereby preventing the completion of the operation. Such an accident is possible, but it may in almost every instance be avoided. It has never happened in my own practice, although I have passed the needle through the sclerotic at least three or four hundred times, and I have never seen it occur in the practice of others.

It is also said that the retina may be wounded, either in the introduction of the needle, or in the act of reclining the cataract. This accident may take place, but it must be occasioned solely by unskilfulness on the part of the operator, and not to the operation. The same remark is applicable to the objection that the lens may be placed in contact with the iris or ciliary processes, and acting as a source of irritation, induce iritis. In the operation of depression this accident must have been of frequent occurrence.

Perhaps the chief objection to the operations by the needle in cases of hard cataract is, that the patient is constantly exposed to a return of the disease by a reascension of the lens, and therefore that the cure is only palliative.

This objection is certainly applicable to the operation of *depression*, in which the lens, as I have stated, can be only imperfectly imbedded in the vitreous humour, and in cases in which the cells of the vitreous humour are disorganized. The lens also may perhaps return its ori-

ginal situation if the operator entangle his needle in the substance of the lens, and in his endeavours to disengage it breaks up entirely the hyaloid cells. But I have never yet seen the lens reascend after being fairly *reclined*, and deeply imbedded in the vitreous humour. Scarpa distinctly says, that he does not recollect a single case in the whole course of his practice, in which the lens returned to its original situation after being *reclined*.

Undoubtedly, a passage is made by the lens through the vitreous humour, but its reascension through that passage is prevented (to say nothing of the greater specific gravity of the lens than of the vitreous humour, to which I attach little importance), by the subsequent closure of the passage by adhesion, which we can scarcely doubt takes place, but which appears to have been overlooked by authors. Every other part of the system, when wounded, undergoes a reparative process, and I cannot conceive the hyaloid membrane to be an exception to so general a law; and in the accounts of the dissections of eyes which had been operated on by reclination, there is no notice of any such previous passage through the vitreous humour.

I have had an opportunity of examining two eyes only which had been operated on by *reclination*, and they were both from the same patient.

The following were the appearances presented;—

Right Eye.—Pupil perfectly clear. The lens enveloped in its capsule was placed about midway between the iris and back part of the eye, and towards its outer side. It lay within about half a line of the retina, a portion of vitreous humour being interposed. It adhered firmly by its capsule to the hyaloid membrane, but had no attachment to the retina. There was no vestige of the course it had taken through the vitreous humour, the whole being equally firm and transparent. The hollow in which the lens was originally situated was partially obliterated, and the posterior chamber of the aqueous humour appeared larger than usual.

Left Eye.—The upper part of the pupil was partially obscured by a shred of opaque capsule, which adhered by a single point to the margin of the iris. The lens was in a similar situation to that of the right eye, not surrounded by its capsule, but reduced to about one-third of its natural size, and apparently in contact with the retina. It was closely surrounded by the vitreous humour, in which it appeared indented, but not adherent to it. It was of a pearly white colour and firm consistence. As in the right eye the vitreous humour was uniformly transparent and equally firm, without the slightest trace of the passage through which the lens must have passed. The patient was sixty-nine years of age, and I had operated upon him for cataract about two years previous to his death. He could read with either eye with the assistance of convex glasses.

Velpeau (Medicine Operatoire, tom. i. p. 749,) mentions that he has examined the eyes of twelve individuals who had been operated upon for cataract by *Displacement*, and in every instance except one the cataracts had contracted adhesions with the retina and choroid, by means of the hyaloid membrane forming a sort of knot or cicatrix of about three lines in length.

We have thus the result both of experience and dissection in favour of the opinion that the reclined cataract does not reascend. There can be no doubt that when the cataract is simply depressed it will frequently return to its original place.

The objection to the operation of *Reclination*, which is considered by many to be of the greatest weight, is, that the lens remains a constant source of irritation, and that by its pressure and friction on the retina it is apt to induce chronic internal inflammation and amaurosis.

As the lens is embedded and fixed in the vitreous humour, and as no motion exists between the vitreous humour and retina, it is clear there can be no friction, and, besides, if there were motion between these parts, the surface of the lens is so perfectly smooth, that no injury would result. Again, allowing that the lens is in contact with the retina, which in the majority of cases I believe is not the case, the whole pressure it can exert will be proportioned to the difference in the specific gravity of the lens, and of the vitreous humour, but this difference is very trifling. The lens, if left to itself, is not heavy enough to sink to the bottom of the vitreous humour, but, at the same time, when once depressed, its difference in gravity is such as to prevent its being floated up to the surface again, even if it did not contract adhesions, or if the passage in the vitreous humour through which it had been depressed did not be-

come obliterated. (Specific gravity of acqueous humour, 1.0003; ditto of vitreous ditto, 1.0009; ditto of lens ditto, 1.0790.) But the best argument which can be adduced is the result of the operation. Scarpa, in speaking of internal ophthalmia followed by amaurosis, as taking place after the operation of *Reclination*, says, "This distressing accident has only happened to me in a single instance during my long practice." It cannot therefore be considered as arising from the pressure of the depressed lens, otherwise it would be of more freqent occurrence. I myself cannot say that I have witnessed any case of internal ophthalmia followed by amaurosis, which was distinctly traceable to the irritation arising from a reclined lens.

There is a very interesting case related by Scarpa, of Signor Lattuada, a young man twenty-five years of age, in whose right eye there is no iris, and apparently no hyaloid membrane. The lens inclosed in its capsule is free from all attachment, and is perceived moving in the cavities of the eye in various directions. When he inclines the head forward, it comes in contact with the cornea, when backward, it falls to the back part of the eye, with the same facility as it would do in a watery fluid. If he remains long in the horizontal position, as during sleep, and consequently with the lens resting on the bottom of the eye, he has never experienced the slightest uneasiness, and he has never been affected with pain or inflammation of the eyes. By means of a convex glass he can distinguish well minute objects. In the left eye, the derangement is less. There is a small strip of fringed-shaped iris at the temporal angle. The lens with its opaque capsule is suspended in its place by a short attachment, which it has preserved with the ciliary zone at the upper and temporal part,—a proof, it would appear, that in this eye the vitreous humour is not entirely disorganized and dissolved into water. There is no attachment whatever of the rest of the capsule or lens, and during the motion of the eyeball and head, it oscillates a little from before backwards. Surely the right eye of this individual ought to have suffered from internal ophthalmia and amaurosis, if either pressure or even friction of the lens on the retina be capable of inducing such consequences, admitting that original malformations do not always produce the same effects as when the results of disease.

One of the principal causes of the failure of the operations for the cure of cataract by Extraction is the violence of the inflammation which follows. So violent, indeed, is the inflammation in many cases, that the depleting measures required often are productive of irreparable injury to the general health of the patient. The argument employed by Mr. Guthrie for operating on both eyes at the same time is, that the patient, should inflammation occur, may be able to bear up for once under the active treatment that may be requisite, although he might not be able to do so a second time, were another operation performed. It is not my intention to enter at present on the consideration of the soundness of this argument. I adduce it simply to show the severity of the inflammation that frequently follows the operation of extraction.

On the other hand, the operation of reclination, if properly performed, is rarely productive of such inflammatory action. So rarely, indeed, that it is almost never necessary to open a vein to subdue it.

Although the observations which I have made on the comparative advantages of the operations of Extraction and Displacement lead to the opinion that the latter is the more successful; still, as mere reasoning on such subjects often leads to false conclusions, I have endeavoured to obtain as correct an account, as possible, of the actual results of these two modes of operating, in the practice of different surgeons, and these strongly confirm the opinion, that displacement is the preferable operation, as is shown in the following tabular views:—

By Extraction.

Operators.	Cases	Cured	Relieved	Failed
Graefe, Berlin	19	18	—	1
Rosas Vienna ..	26	22	1	3
Daviel	240	207	—	33
Hotel-Dieu from 1806—10. ..	70	19	6	45
Pamard	359	302	—	57
La Faye	6	2	2	2
Poyet	7	2	2	3
Roux	306	188	—	188
Pelletan	50	20	—	30
Dupuytren	50	20	—	30
Jules Cloquet ..	80	28	—	52
Fabini, Pesth...	94	71	—	23
Total	1307			397

Or 30 three tenths per cent. of failures, or about three in ten.

By Displacement.

Operators.	Cases	Cured	Re-lieved	Failed
Graefe	14	12	—	2
Hotel-dieu from 1806—10 ...	43	24	4	15
Bowen	160	154	—	6
Lusardi	5034	4168	—	866
Dupuytren	306	263	—	43
Jules Cloquet ..	166	97	—	69
Morland	6	3	—	3
Total	5729			1004

Or 17 five tenths per cent. of failures, or one and three-quarters in ten.

It is to be regretted that so few authors have given an account of the proportion of succesful cases and failures, according to the mode of operating adopted. On looking at the above table, we must be at once struck by the great relative success of the operation by displacement.

In the tabular view are included a great number of cases operated on by depression. In as much, therefore, as the operation of reclination is preferable to depression, in the same degree ought the resulting success in such cases to be greater than that stated.

It is proper also to remark, that the operation of extraction is usually performed only in the most favourable cases, whereas that by displacement is had recourse to even the most unfavourable circumstances, and it is evident that the apparent success would have been still greater from displacement, had that operation been performed only in those cases in which the operation of extraction was advisable. To show that such is really the fact, I subjoin a statement of the cases of hard cataract, without any complication, and in eyes otherwise healthy, on which I have operated. Under the head of successful operation, I have placed all those persons who were able to read moderate sized print, with the aid of cataractous glasses. Under the head of relieved, I have placed those who, though unable to read, were able to guide themselves without assistance. All others I have classed as failures. Of 179 cases of hard cataract without any complication, there were operated on by

		Cured	Reliev'd	Failed
Extraction	64	33	14	18
Reclination	115	94	10	11

Proportion of failures by extraction 28 one-eighth per cent.

Proportion of failures by reclination 9½ per cent.

CAUSES OF FAILURE.

Extraction.

Suppuration of eyball, 3; atrophy of eyeball, 5; opacit of cornea, 4; obliteration of pupil, 3; amaurosis, 3: total 18.

Displacement.

Suppuration of eyeball, 2; atrophy of eyeball, 3; obliteration of pupil, 4; amaurosis, 2: Total 11.

CAUSES OF PARTIAL FAILURE.

Extraction.

Opacit of cornea, 5; obliteration of pupil, 4; amaurosis, 5: Total 14.

Displacement.

Opacit of cornea, 1; obliteration of pupil, 5; amaurosis, 4: Total 10.

I have given in this table cases of hard cataract only, withont any such complication as would preclude the operation of extraction, it being admitted that soft cataracts ought to be broken down by the needle, and that when the cataract is hard, but complicated with adhesions of the iris, obliteration of the pupil, diseases of the cornea, &c., the mode of operating, and the degree of success, will vary according to the peculiarities of each indidual case. They could not, therefore, afford any means of comparison between the operations of extraction and reclination.

From what has been stated the following conclusions may be drawn :—

1. That the safest mode of operating when the cataract is soft, is by breaking it down, and thereby effecting its absorption.

2. That in all operations in which the needle is used, that instrument ought to be entered through the sclerotic, and not through the cornea.

3. That in cases of hard cataract, complicated with the various diseases of the eye, and its appendages, above-mentioned, the needle ought to be employed, the mode of operating being adapted to each individual case.

4. That hard cataract without such complications, may be effectually removed by the operations of extraction or displacement.

5. That the operations of depression is impracticable, and that attempts to perform it will be productive of the most injurious results.

6. That many of the accidents which may occur during the operation of extraction cannot be avoided by any degree of skill or dexterity, and, therefore, form valid objections to the operation.

7. That the accidents which may occur during the operation of reclination arise from faults on the part of the operator, for as soon as the needle is entered, he has complete command over the eye. They do not, therefore, form valid objections to the operation.

8. That the success resulting from the operation of reclination is very much greater than that from extraction.

9. That in cases of failure of the operation by reclination, the eye, in the majority of instances, is not left in so hopeless a condition as when the operation of extraction has failed.

10. That, in consequence of the comparatively rare occurrence of violent inflammation after reclination, there is infinitely less likelihood, than in the case of extraction, of such depleting measures being required as may prove ruinous to the general health of the patient.

58, *Queen-street, Edinburgh.*

THE ANATOMIST.

THE TIBIALIS POSTICA

sends off—

A. *Muscular.*

B. *Peronæal*, which sends off, 1st, the nutritia fibulæ; 2nd, the muscular; 3rd, the anterior peronæal; and 4th, the posterior peronæal.

C. *Nutritia tibiæ.*

D. *Internal plantar.*

E. *External plantar.*

THE TIBIALIS ANTICA

sends off the following branches—

A. *Muscular.*

B *Recurrent.*

C. *Internal malleolar.*

D. *External malleolar.*

E. *Tarsal branch.*

F. *Metatarsal branches.*

G. *Arteria pollicis.*

H. *Arteria communicans.*

THE PLANTAR ARCH

is formed by the external plantar artery uniting with the arteria communicans of the anterior tibial; it sends off two sets of branches.

A. *Arteriæ perforantes.*

B. *Arteriæ digitales.*

THE PULMONARY ARTERY

divides into two branches.

A. *Right pulmonary.*

B. *Left pulmonary.*

VEINS.

The veins are not so uniform in their distribution as the arteries. Besides the numerous superficial veins which ramify on the skin, one or two are found to accompany each artery. In the extremities there are generally two to each artery, and in these situations they receive the name of *venæ comites.* When, however, an artery is of great size, as the femoral or the axillary, it is accompanied but by one vein, which receives the same name as the artery.

VEINS OF THE HEAD AND NECK.

The Parietal and Temporal veins unite behind the angle of the jaw, and here receive the *internal maxillary vein;* by their union is formed the

External jugular vein. This vessel descends obliquely backwards, and joins the subclavian vein. A little after its formation it receives the trunk of the *facial vein*, and in its course down the neck it receives several superficial veins.

Internal jugular vein commences at the termination of the lateral sinus, descends along the outer side of the common carotid artery, and joins the subclavian vein at the sternal extremity of the clavicle. It receives the laryngeal and some muscular veins.

VEINS OF THE SUPERIOR EXTREMITY.

The Cephalic vein is formed by the union of several veins from the back of the hand. It ascends along the radial side of the extremity, and terminates in the *axillary vein.*

The Basilic vein commences by a small vein from the little finger (*vena salvatella*), ascends along the inner side of the extremity, and terminates in the axilliary vein, or joins one of the *venæ comites*, which accompany the brachial artery.

The Median vein commences at the fore-part of the wrist and hand, ascends along the anterior aspect of the forearm, and at the elbow terminates, by dividing into two branches. One of these joins the basilic vein, and is named the *median*

basilic; the other joins the cephalic vein, and is named *median cephalic.*

The Axilliary vein formed by the union of the veins just described, and by the *brachial venæ comites*, ascends in front of the axillary artery, receiving the *thoracic veins*, and passes beneath the clavicle, where it terminates in the subclavian vein.

The Subclavian vein passes inwards over the anterior scalenus muscle, receives numerous veins from the neck and shoulder; also the *external jugular* and *vertebral veins*, and joins the internal jugular vein behind the sternal extremity of the clavicle.

Vena innominata, formed by the union of the internal jugular and subclavian veins, on the right side is very short and descends into the thorax; the left vena innominata, which is much longer, enters the thorax in a transverse direction in front of the trachea to join the right vein, and in its course receives the *thyroid veins* and veins from the anterior mediastinum. By the union of the venæ innominatæ is formed the

Vena cava superior, which descends in front of the right pulmonary vessels, enters the pericardium, and opens into the right auricle.

VENA AZYGOS,

commences on the first lumbar vertebra by one or two small veins, gains the posterior mediastinum, by passing through the aortic opening of the diaphragm, ascends along the right side of the bodies of the dorsal vertebræ, curves forwards over the root of the right lung, and terminates at the posterior aspect of the superior vena cava, as this vessel is entering the pericardium. In its course it receives the *intercostal veins* of each side, and the *œsophageal veins.*

VEINS OF THE INFERIOR EXTREMITY.

Internal saphena vein, commences at the inner part of the foot, ascends along the inner side of the leg and knee, behind the inner condyle, becomes more anterior upon the thigh, and reaching to within about two inches of Poupart's ligament, passes through the saphenic opening of the fascia lata, and joins the femoral vein.

External saphena vein, commences at the outer part of the foot, ascends along the back part of the leg and ham, and joins the popliteal vein.

Both these veins are superficial and in their course receive several veins from the integuments.

Deep veins of the leg, two veins (venæ comites) accompany each artery in the leg, and terminate in the following—

Popliteal vein, this vessel accompanies the artery of the same name, and having received the external saphena vein, and the veins of the knee, terminates in the femoral vein.

Femoral vein accompanies the femoral artery, and having received the profunda vein, the internal saphena vein, and a few muscular veins, passes beneath the crural arch, and ends in the external iliac vein.

External Iliac vein accompanies the external iliac artery.

Internal iliac vein is formed by the union of the veins which accompany the internal iliac artery and joins the external iliac vein at the sacro-iliac symphysis.

Common iliac vein, formed by the union of the internal and external iliac veins, joins its fellow at the right side of the body of the fourth lumbar vertebræ to form the inferior vena cava.

Inferior vena cava ascends along the right side of the bodies of the lumbar vertebræ, behind the liver, and passes through the quadrilateral opening in the diaphragm and opens into the right auricle at its lower and back part. It receives the middle sacral, one and sometimes both spermatic veins, the emulgent and capsular veins, the venæ cavæ hepaticæ, and the phrenic veins.

VENA PORTÆ

commences on the back of the rectum by one of the *hæmorrhoidal* veins, ascends towards the meso-colon and unites with the *inferior mesenteric vein*; this trunk next unites with the *superior mesenteric vein*, and behind the pancreas it unites with the *great splenic vein* and receives veins from the stomach, duodenum and pancreas. The vena portæ thus formed ascends to the right side, inclosed in the capsule of Glisson, and reaches the transverse fissure of the liver where it divides into two branches; these enter the liver, ramify through its substance like an artery and its blood is returned to the inferior vena cava by the venæ cavæ hepaticæ, which are three or four in number and open into the cava as this vessel is entering its opening in the diaphragm.

THE DIGESTIVE APPARATUS.

THE MOUTH.

This cavity is bounded superiorly by the hard and soft palate, inferiorly by the tongue and the reflections of mucous membrane from it to the gums, and laterally by the cheeks. Its anterior opening, which forms the commencement of the digestive canal, corresponds to the lips; and posteriorly it communicates with the pharynx through the opening called isthmus faucium, the boundaries of which are, the so t palate and uvula superiorly, the tongue inferiorly, and the pillars of the palate and tonsils laterally. Within the mouth we observe the opening of the three salivary glands and follicles, and the teeth of either side. The parotid gland opens by a single orifice opposite the second last superior molar tooth; the sub-maxillary gland of either side, by a single orifice at the anterior part of the tongue, by the side of the reflection of mucous membrane called frenum linguæ, and the third salivary gland or sublingueal by several small orifices (eight or ten) on either side of the tongue.

THE TEETH.

The number of teeth in the adult is thirty-two, sixteen in each jaw; and to distinguish them from the teeth of the child they are called *permanent*. They are divided into eight *incisors*, four *canine*, eight *bicuspids*, and twelve *multicuspids* or *molars*. The two last molars do not appear until late in life, and hence have been called the *wisdom* teeth. They are, however, sometimes wanting.

In the child the number of teeth is only twenty, and are called milk, deciduous, or temporary teeth. They are divided into eight *incisors*, four *canine*, and eight *molars*.

THE PHARYNX

Is a musculo-membraneous bag of a conical shape, extending by its base from the posterior part of the mylo-hyoid ridge and base of the skull, to the posterior aspect of the cricoid cartilage, where it terminates in the œsophagus. It is connected by its posterior wall to the vertebræ by loose cellular tissue, and interiorly it corresponds to the mouth and larynx.

On laying open the cavity of the pharynx by a perpendicular incision along its posterior median line, the internal mucous lining of the bag will be exposed, and the following openings, viz. superiorly, one on either side of the medial line, the openings of the posterior rares; more externally, one on either side the openings of the Eustachian tubes; inferior to these is the opening of the mouth into the pharynx, or the isthmus faucium; posterior and inferior to the tongue is the glottis, and lastly the opening of the pharynx into the œsophagus.

THE ŒSOPHAGUS

Extends from the termination of the pharynx to the stomach; it is placed, above, between the vertebræ and the trachea, inclines at the inferior part of that tube to the left side, and passes behind its left bifurcation to reach the posterior mediastinum. In the mediastinum it descends forwards, passes through the oval aperture of the diaphragm, and terminates in the stomach. The mucous membrane of the mouth, pharynx, and œsophagus is covered by epidermis.

THE STOMACH.

A large pyriform musculo-membranous bag, situate in the epigastric and left hypochondriac regions, communicating at one extremity with the œsophagus, and at the other with the duodenum.

Connexions.—Its large extremity, or *fundus*, to the spleen by the gastro-splenic omentum; its upper concave, small edge to the liver by the gastro-hepatic omentum; and its lower, convex large edge to the colon by the gastro colic omentum. Its œsophagus, or cardiac orifice, situated between the fundus and lesser curve, connects it to the diaphragm, and its pyloric orifice to the duodenum. The superior-anterior surface of the stomach looks towards the diaphragm, ribs, and left lobe of the liver; the posterior-inferior surface towards the meso-colon.

The stomach is composed of three tunics, connected by cellular tissue, an external peritoneal coat, an internal mucous coat, and between both the muscular coat. The muscular fibres of the stomach observe three directions; the longitudinal are seen along the edges or curves, the obl que on the fundus and the circular are well developed at the centre of the organ, and at its pyloric orifice. The mucous coat presents minute piles (*villi*), it is thrown into wrinkles (*rugæ*), or folds (*plicæ*), which intersect each other, inclosing irregular quadrilateral spaces. Numerous mucous glands (glandulæ Brunnerii) are found along the curves, and at the py-

lorus; in the fundus small glands exist, which have been supposed to secrete the gastric juice At the pyloric orifice the mucous membrane is thrown into a circular fold, which forms an imperfect valve between the stomach and duodenum; and at the œsophageal opening the epidermic lining is observed to terminate in a fringed edge.

The London Medical

AND

Surgical Journal.

Saturday, July 22nd, 1837.

CHARING CROSS HOSPITAL.

A NEW RECOGNITION WANTED.

It will be fresh in the recollection of our readers, that the Medical Officers of the Charing Cross Hospital resorted to the most serious fraud in order to induce the Council of the College of Surgeons to grant them a recognition; and they had the baseness, in order to occupy the required number of beds, to collect individuals from the adjoining workhouses, to represent the required number of patients, bribing these paupers to participate in the conspiracy by giving them food and drink for a few days, during which Sir Astley Cooper and Sir Benjamin Brodie were delegated by the Council to examine the Hospital, and ascertain that the regulations of the College of Surgeons were duly complied with. When the gross imposition was detected, and when it was discovered that the hospital in place of containing 110 beds occupied by patients, had not in fact 70 patients, except on the "three glorious days," the College of Surgeons had the honesty openly to declare their abhorrence of the whole transaction, and immediately withdrew their recognition; and had it not been for a highly praise-worthy feeling, and compassion for one of their body, who was deeply implicated in the whole transaction, he would have been dismissed from the Council.

Recollecting these almost unparalleled events, it will scarcely be credited, that the Director-General, with his accomplished staff, contemplate again to make an application, and that too before the 1st of October, to get the recognition, which was so ignominously wrested from them by the Council of the College of Surgeons, once more within their iron grasp. With a view to obtain this new recognition, temporary inmates have been procured to fill up the number of beds directed by the College, and every nerve has been strained to raise a sum of money to provide them with food, so that the imputation of a three days comedy cannot be made.

Amongst the many ingenious devices for accomplishing their charitable purposes, none has been more profitable than subletting parts of the building for shops, and if a suitable tenant can only be found to pay handsomely for the "beautiful family residence," there can be little doubt but that the requisite number of patients will be engaged and supported for a limited period in order to obtain the recognition.

We have our own doubts whether there be any member of the Council who will have the hardihood to propose the recognition of an hospital, the whole history of which as well as the imposition which was so lately exercised on their own body by its medical officers, is so discreditable; and although Mr. Howship, who is still a member of the Council, and a Surgeon of the Charing Cross Hospital, must feel deeply interested in obtaining a recognition, yet, we hesitate not to say, that he will feel the utmost delicacy, though he certainly may have *five hundred reasons*, in publicly coming forward

at the Council on this occasion. From the decided and active part which Mr. Lawrence has taken on this and many other occasions, in exposing the abuses and frauds of the Council of the College of Surgeons, we may confidently hope that the new intriguer from King's College will fail in his contemptible project. Although Mr. Lawrence's laudable proposal, which he had the manliness to bring before the College, was not acceded to on a former occasion, yet there can be no doubt, that should occasion require it, he will be warmly supported in any measure he may think it necessary to bring forward, touching the new recognition, by all the more respectable members of the Council; and we do fervently trust, that the net which was so artfully woven, and which entangled Sir Astley Cooper and Sir Benjamin Brodie, and which the Birmingham diplomatist is now manufacturing with such address, will be much too large in its meshes again to entangle the two surgical baronets.

Since the preceding remarks were written, an advertisement has appeared in the public prints announcing that a General and a Special Meeting of the Governors would take place, the former for the purpose of considering the affairs of the Hospital; and the latter to take into consideration certain negotiations which are pending between the Joint Stock Company of King's College, and the Junto Committee of this Hospital. Our readers, no doubt, will be astonished at this information, when it is fresh in their recollection that the very men who are now anxious to effect a junction with the falling Medical School of King's College, made this very proceeding a pretext to the governors at large of the hospital, for removing out of their way, the two most efficient medical officers of the charity, Dr. Sigmond and Mr. Pettigrew. How far these persons can reconcile their present barefaced proceedings with their former conduct, it is the duty of the governors at large to immediately investigate; and though they have, as usual, selected a time when the most influential governors are absent from town, or engaged in electioneering pursuits, yet their gross inconsistent conduct cannot fail to disgust the profession, and to excite its merited contempt.

ON THE TYPHUS FEVER, WHICH OCCURRED AT PHILADELPHIA IN THE SPRING AND SUMMER OF 1836;

Illustrated by Clinical Observativns at the Philadelphia Hospital; showing the distinction between this form of disease and Dothinenteritis or the Typhoid Fever with alteration of the follicles of the small intestine.

By W. W. Gerhard, M.D.,
One of the Physicians of the Hospital.

During a residence of two or three years at Paris, I had studied with great care the pathology and treatment of the disease usually termed, in the French Hospitals, typhoid fever or typhoid affection. There is another designation for it, founded on its anatomical characters, and therefore more directly in accordance with modern medical nomenclature; it is dothinenteritis. This variety of fever, which is identical with the disease termed typhus mitior or nervous fever, is frequent at Paris, and is almost the only fever which can be said to be endemic there. Intermittent and remittent fevers are rarely seen, except amongst those individuals who had already contracted some form of these diseases in the malarious districts of France. Some slight fevers, attended with a whitish or yellow tongue and gastric symptoms, occasionally occur; they scarcely assume the form of a fixed disease, and usually disappear under a very simple treatment.

These fevers were the only ones known at Paris for some years past; but in 1813-14, there occurred a severe epidemic fever, characterized by extreme prostra-

tion and strongly marked cerebral symptoms. This epidemic was first noticed amongst the troops who returned from Napoleon's unsuccessful campaigns in Germany and the east of France; it afterwards spread amongst the inhabitants of Paris and other large cities, and was every where extremely fatal. No accurate description of this fever is on record, although it was witnessed by several of the most distinguished French physicians. Some of these, more especially Louis and Chomel, are inclined to consider it as identical with the prevailing dothinenteritis, but their opinion is probably erroneous, and the disease, as far as we know, should be classed amongst the forms of continued fever, distinguished by the terms typhus, typhus gravior, petechial or spotted fever, &c.

There are, however, complete histories of the typhoid fever or typhoid affection, or dothinenteritis, (all names belonging to the disease). It is one of the most frequent and the most severe acute affections observed at Paris, and has been studied with extreme accuracy, more especially by Louis and Chomel, who have both published admirable descriptions of it. The work of Dr. Louis is especially interesting, and is a model of its kind; he has analyzed the symptoms and pathological phenomena of the fever so accurately and fully, as to surpass any other description of individual diseases. The typhoid fever was placed by this work of Dr. Louis, in the same relation to other fevers that pneumonia holds in reference to the affections of the chest. They are both so well studied, and their symptoms are so well known, that they serve as types with which other less thoroughly understood affections may be compared.

It affords us, then, great advantages in the investigation of the history of fevers, to begin with the typhoid, as the best known of these affections. Assuming this disease as the basis of our investigations, one great point is gained, and much greater certainty can be given to our ulterior researches, if we compare the symptoms of any fever, which is little known and imperfectly described, with those of the typhoid fever, or dothinenteritis, as it is now frequently called from its anatomical lesion.

This inquiry was in accordance with a desire which I had long cherished of investigating the most common fevers in the middle states of America, where, from our geographical position, we witness the fevers observed at the northern, and occasionally those of the southern states. The commercial relations of Philadelpnia are so frequent with the whole southern coast of the United States, and the passage to the north so rapid in the summer and autumnal months, that we receive into our hospitals a considerable number of patients taken ill on the coast of North Carolina, Virginia, and even Alabama and Louisiana. There are, therefore, few places where such a study could be pursued to more advantage than at Philadelphia. During the last three years of a constant connexion with our largest hospitals, either as resident or attending physician, I have not lost sight of this object of study, and I have already published, in the American Journal, for the year 1835, some cases of the dothinenteritis as well as of the remittent and intermittent fevers.

Dothinenteritis is by no means a rare disease at Philadelphia, although less common than in Paris. In the essay alluded to, I established the identity of the anatomical characters and of the symptoms of the fever occurring at Philadelphia, with that observed at Paris. I also showed that the patients were chiefly those who had resided but a short time at Philadelphia, and that they were taken ill on ship-board, or some other circumstances causing an abrupt change of food and habits of life. They were also young persons, but few having passed the age of twenty-five years. Both these conditions of age and change of habit are observed to be essential to the developement of typhoid fever at Paris.

Having once established the complete identity of a fever which is so common at Paris, and so well described, with a similar affection, not unfrequently met with at Philadelphia, I examined the pathological phenomena of our remittent and intermittent fevers of the severe malignant character so frequently observed along the southern coast, and sometimes occurring in those malarious parts of the country which are situated within a short distance of Philadelphia. In all these fevers, the glands of Peyer as well as the other intestinal follicles, were found perfectly healthy; the large intestine was occasionally but not constantly diseased, while the stomach, and to a still greater degree the liver and spleen were invariably found in a morbid condition. If the fever proved fatal in the course of the first fortnight, the liver and spleen were softened as well as enlarged; but if the disease assumed a more chronic form, the viscera were hardened as well as hyper-

trophied. The latter state was the first stage of these chronic lesions which are formed in the livers of patients long affected with remittents or intermittents, and which continue throughout the course of the ascites, which is so common a consequence of these diseases. I made numerous examinations of the bodies of patients who died of the same variety of malignant remittent and intermittent during the summer of 1835, and still more frequently in the epidemic of 1836, a year in which these diseases have been unusually fatal throughout the southern states. The results of these late examinations have confirmed those already obtained, and showed that the follicles of the small intestine are free from lesions, and that the anatomical character of the disease is to be looked for in the spleen, liver, and stomach.

The bilious and yellow fevers are probably referrible to the same class as the malignant remittents, but in yellow fever the disorganization seems to be most extensive in the stomach, whence arises the black vomit, which forms a characteristic symptom of the disease. Bilious fever, or, in other words, the remittent fever attended with unusual alteration of the liver and a disordered secretion of bile, is common with us. Yellow fever is rare, and occurs in an epidemic form at such long intervals, that I have seen but few cases of it.

The typhus fever, which is so common throughout the British dominions, especially in Ireland, is not attended with ulceration or other lesion of the glands of Peyer. (I mean that this lesion, when it occurs, is merely accidental, or a complication not occurring in the ordinary course of the disease.) From the account of the lesions presented by most of the writers upon the subject, it would seem that there is no constant anatomical lesion, but that the lungs present traces of disease more than any other organ. My own observation of this variety of fever was limited to the examination of the fever patients under the care of the late Dr. Gregory of the Edinburgh Infirmary. This observation was not sufficiently long or accurate to enable me to do more than refer to those physicians who have enjoyed extended facilities for the study of this affection. The lesion of the glands of Peyer is now well known to the British physicians, but an error frequently committed by them is, that they regard this affection (dothinenteritis) as a mere complication of their ordinary typhus, or a modified form of it. At least I do not at this moment recollect any one who has clearly stated that the two diseases are always distinct, before the publication of a note in the Dublin Journal, by Dr. Lombard, of Geneva, (Sept. 1836.)

It is not possible to set this matter at rest, unless a series of accurate histories of typhus, with detailed symptoms and pathological lesions, should be published by British physicians. With the aid of a statement of this kind, such a comparison might be made as to set the points of difference between the ordinary British or Irish typhus and the dothinenteritis of France in their true light. From the information we possess, we should conjecture that the two diseases are widely and entirely different in symptoms, anatomical characters, treatment, and mode of transmission. But the British typhus seems to us to be identical with the disease which forms the subject of the present memoir, and is apparently the same affection which is variously designated—typhus gravior, ship fever. jail fever, camp fever; sometimes petechial, or spotted fever. The term typhus mitior of the older writers, seems nearly synonymous with that of typhoid fever, or dothinenteritis, of the French physicians.

In America there have occurred several epidemics of fever, more or less similar in their nature to the British typhus. Some of these were confined to the New England States, where they were often known under the name of spotted fever, and are described by North, Hale, and others. Other epidemic diseases of a similar type extended to a larger district of country, and overran a considerable portion of the Middle States, causing extensive ravages both in town and country. It was of epidemics of this kind that many distinguished physicians of Philadelphia perished in different years, amongst them were the Professors of the University, Rush, Wister, and Dorsey. No distinct history of the typhus fevers which prevailed at Philadelphia, at different periods between the years of 1812 and 1820, is on record. I mean such an account of the disease as makes its diagnosis so clear that there can be no danger of confounding it with other analogous affections. The fever was well studied by the physicians who practised at that time, but the habit of analyzing symptoms had not been introduced, and their experience, however valuable to themselves, was in a great degreee lost to their successors. These remarks are so true, that although an emi-

nent physician of Philadelphia pronounced the epidemic of 1836, to be the same as that of 1812 and succeeding years, another distinguished medical gentleman, who was not familiar by his own experience with the former disease, considered them as distinct affections, and that the one which first occurred was a low grade of pulmonary inflammation.

That the fevers were really identical, was proved by the opinion of Dr. Parrish, one of the most experienced physicians of Philadelphia, who practised very extensively amongst all classes of inhabitants in the winter of 1812-13, and was remarkably successful in his treatment of the prevailing fever. He saw some of the cases at the Philadelphia Hospital in 1836, before the disease had extended to the wealthier classes, and immediately recognized its true character.

For a period of at least ten years there has been no epidemic of this nature at Philadelphia. In the year 1827, a large number of Irish emigrants were ill of a typhoid fever, with ulceration of the small intestines, which was probably dothinenteritis, and during several successive years there were more or less extensive epidemics of remittent and intermittent fevers, occurring in the neighbourhood of the city, but not often extending into the central parts of the town. Occasionally, sporadic cases of fever of a comatose or typhoid character would occur, but these cases were nearly always either some form of malignant remittent, or else they occurred during the winter months, and where complicated with pneumonia. The inflammation of the lungs then appeared as the first stage in the disease, which afterwards assumed those cerebral symptoms of stupor and feebleness which have procured for it the designation of pneumonia typhoides. These cases I often witnessed while resident physican of the Almshouse Infirmary during the years 1828-30.

At Boston, in the year 1833, there was an epidemic dothinenteritis, of extreme gravity and unusually fatal. This fever was well studied by the late James Jackson, jun., and other physicians, and was proved by them to be identical in symptoms and pathological lesions with the typhoid fever of Paris. Some of the physicians of that city are inclined to regard epidemics as of this nature, but this opinion seems to us more than doubtful. Since the epidemic, the typhoid fever is there a common sporadic disease, rather more frequent apparently than at Philadelphia.

In the winter of 1835-6, there was an unusual number of cases of gangrene of the lungs at the Philadelphia Hospital, and but few of decided pneumonia. Several cases of dothinenteritis occurred in the autumn, but there were few afterwards. During the winter, a form of fever not commonly met with at the hospitals, was observed from time to time. It was characterized by pungent burning heat of the skin, dusky aspect of the countenance, subsultus, delirium, with great stupor and prostration; but there was no diarrhœa, and but few other symptoms referrible to the alimentary canal. It was the disease which afterwards appeared as an epidemic. At first it was not well understood by us, was sometimes confounded with bronchitis or pneumonia typhoides, from the complication of pulmonary disease with the symptoms of the fever. These cases recovered under the use of a mild stimulating and supporting treatment, with one exception, in which death ensued from the sloughing of the sacrum and gangrene of the lungs.

In the early part of the month of March, the admissions for the fever were more numerous. They attracted the greater attention from their occurring in groups of several from the same house, and almost all coming from a particular neighbourhood. Amongst the very first admitted were seven negroes, the entire population of a cellar in the lower part of the city. The symptoms varied but little in the seven cases, and upon an examination of two of the number who died, no lesion of sufficient importance to account for the symptoms could be detected.

As soon as these patients were admitted I resolved to note with care the pathological lesions presented by the bodies of most of those who should die of the fever, examine its symptoms, and ascertain the influence of therapeutic agents upon it. This research was commenced with a view to obtain more precise notions as to the character of an epidemic, which has probably more than once appeared in America, and seems to be endemic in Great Britain and Ireland. It was especially desirable to ascertain if there was a real fundamental difference between the form of disease which prevailed this year, and the dothinenteritis which is always to be met with in America, as a sporadic affection. My friend and colleague, Dr. Pennock, had charge of one-half the medical wards of the Philadelphia Hospital; his observations were conducted at the same time with my own, but the autopsies and

the examination of doubtful cases were always made in the presence of both of us. Dr. Pennock noted a large number of cases, and has given me the privilege of adding his collection to my own. They are the more valuable from the familiar knowledge which he obtained of the dothinenteritis in the wards of La Pitié at Paris. Our inquiries were conducted so much in concert, and our opinions as to the symptoms and treatment of the fever were so often compared together, that this memoir is, in most respects, the expression of the results obtained by our joint labours.

A portion of the cases were treated by Dr. Pancoast; of these I have no notes excepting such as were obtained from the registers of the wards; they were chiefly admitted towards the close of the epidemic season, when we had already procured a large mass of materials.

These inquiries were greatly promoted by the zeal and industry of the resident physicians of the hospital, who were all much interested in the examination of the disease, and untiring in their efforts to relieve the suffering of patients, who always required much more than ordinary care. In the rotation of service the most arduous duty fell to the lot of Drs. Bush, Stillé, Patterson, Elmer, Frisby, and Johnson, of whom the two last mentioned were themselves attacked with fever.

Many of the observations are deficient in the history of the early symptoms, as the patients, at their entrauce into the hospital, often did not retain intelligence enough to recollect the previous symptoms of their disease. The autopsies were always made with great care, more particularly the examination of the small intestines; but the weight of occupation, and the ennui of recording results which varied so little among themselves, caused us to neglect committing some of them to paper. We have, however, noted in detail, a very large number, showing the nature of the lesions; and we always took great care to remark the diseased or healthy state of the organs. We are quite sure that nothing of importance escaped us, and, above all, that the condition of the follicles of the small intestines was carefully ascertained. Our mass of facts is so considerable, that many important questions will be solved by them in relation to the history of this form of continued fever. They will clear up many questions relative to the disease; for although few cases are as complete as we could have desired, the information which is wanting in one case may be gathered from others; none are deficient in all the particulars, or fail to give a tolerably exact statement of the symptoms at one period or other of the disease.

In our investigations, we availed ourselves of the opportunities we possessed to inquire into the pathological anatomy, the symptoms, the mode of communication, and the treatment of this fever, which had not been witnessed at Philadelphia for some years, even if it were the same disease as that of former epidemics. At each step of this progress, I shall compare the facts before us with those relating to the history of the typhoid fever, or dothinenteritis, and when the symptoms differ, it will be easy to draw the line of distinction between two diseases, differing in their treatment, symptoms, duration, and pathological lesions.

There is some confusion in the designations of these fevers, but it is not my intention to enter upon the discussion of their nomenclature. It is sufficient to state that in using the terms typhus, typhus fever, typhus gravior, spotted or petechial fever, I mean that disease which forms the subject of this memoir, and that by the terms typhus mitior, typhoid fever, or dothinenteritis, I mean the disease described by Louis, Chomel, &c., and attended with a lesion of the glands of Peyer.

The number of cases admitted with typhus, was 214. Of this number there were 120 men and 94 women. A few cases that were at the same time in the wards, and already under treatment for other diseases, are not included, although they were afterwards affected with the prevailing epidemic, but the names on the register present only the disease for which they had been admitted. The whole number of cases is, therefore, from 230 to 250. A large majority of the 214 patients were negroes or mulattoes, there were 147 people of colour, and 67 whites. The disease first appeared in the former class of patients, and always prevailed more extensively amongst them than the whites who were living in the same part of the town and exposed nearly to the same causes of disease.

The patients were taken with the fever in various parts of the city and neighbouring districts, but by much the greatest number came from that part of the town which extends from Lombard-street to a little below Shippen, and from Fifth to Eighth-streets; this small but crowded district became almost an infected suburb.

Within these limits the poorest and most intemperate of the inhabitants of Philadelphia reside. It is the St. Giles, or the Faubourg Saint Marcel of Philadelphia. The filthiest and most crowded alleys offered the greatest proportion of patients. Thus, Small-street and St. Mary's-street, with the numerous courts and alleys running from them, contained many more sick than other streets inhabited by a population nearly as poor and intemperate, but less crowded. The different streets were not infected at the same time, thus the earliest patients were taken ill in Shippen and in Small-streets, while St. Mary's-street, which furnished an immense number of patients, was comparatively free from infection until a month afterwards. The disease appeared very soon in the prison (now taken down) in Arch-street, but as the inmates of the prison came in great part from the infected district, it is possible that the disease may have been introduced by those who were admitted while labouring under it. Towards the close of the epidemic, patients were admitted in considerable numbers from some of the streets in the Northern Liberties, and throughout its whole course there were scattering cases from different parts of the city, and a few from the country, where there was no others ill in the house from which the patient had come. But few cases, however, occurred in the central parts of the town, where the inhabitants are generally in easy circumstances and comfortably fed and lodged.

Classes of persons affected.—The first patients were almost exclusively from the poorest and most intemperate class of people, chiefly day-labourers. Such was the case with most of the blacks, especially the men, who were almost without exception in the habit of drinking freely of ardent spirits. The women were without fixed occupations, or were servants out of place. As the disease extended to the different parts of the city, people of various occupations were affected, amongst them there was a respectable physician, who died of the fever. The extension of the disease to those in easy circumstances, was shown in the practice of several eminent physicians of Philadelphia; they had not seen a case until the fever had prevailed some months at the hospital, although they afterwards met with it in their private practice.

Mode of propagation of the disease.—The origin of the disease is as unknown as most epidemics; according to the general rule, it attacked those who were sunk in poverty and intemperance, and huddled together in confined apartments. It also appeared at different and remote points, some miles distant from the focus of infection, without the possibility of tracing any direct communication with those already attacked. There was, thus, a general cause, which extended its influence throughout the vicinity of Philadelphia. But, besides the epidemic cause, from which the greater number of cases seemed to arise, the fever was evidently propagated in a considerable proportion of patients by direct contagion. Those who entered at an early period of the epidemic came in groups together, some from the prison, whole families from the same room or the same house. About that time, I made a careful inspection of the district as one of a committee of the Board of Health, and in some instances we found houses completely vacated, the tenants being either dead or at the hospitals. In other cases, the whole or a large portion of the inhabitants of a room were ill. It was rare to meet with a severe case without seeing others in the same house.

The evidence of contagion at the Philadelphia hospital was more direct and conclusive. Three of the principal nurses, and about a dozen assistant nurses, besides a number of patients ill with various diseases were taken with the fever. The principal nurses belonged, two to the wards for blacks, where there were the greatest number of fever patients, and the third to a ward for whites, where there were several cases. There was only one nurse of a ward in which many of the patients were collected, who escaped, but several of his assistants and patients were taken ill. Two of the resident physicians in attendance in the same ward, where the patients were most numerous, were also severely ill with the fever. On the other hand, no nurse from the part of the hospital where there were but few or no typhus cases, suffered, and the number of patients taken ill in the surgical or lunatic wards was very small, not exceeding six in number. The wards in which fever patients were placed did not contain more than a third or a fourth of the population of the hospital, yet the number of cases originating in them after the first introduction of the disease was at least four times as great as in all the other parts of the building. The Alms-house and house of employment, which are separated from the hospital by a space of at least forty feet at the nearest points,

furnished five or six cases, probably not more than the same number of poor in any other part of the neighbourhood would have done.

The proportion of attendants upon the sick who suffered was in exact relation to the number of fever patients in the ward; thus in the wards for blacks (both men and women), and in the men's medical, No. 1, scarcely an assistant escaped. In the other medical wards a few were taken ill, and in the surgical and lunatic wards, all the nurses escaped. The matter of the contagion, be it what it may, was generally mingled with the air, but sometimes seemed to be combined with the pungent hot sweat of the patients. In some cases the contagion was evidently direct from body to body. This was established by the evidence of a nurse and an assistant, both persons of intelligence, and, from their familiarity with the disease, quite free from fear. The nurse was shaving a man, who died in a few hours after his entrance, she inhaled his breath, which had a nauseous taste, and in an hour afterwards was taken with nausea, cephalalgia, and ringing of the ears. From that moment the attack of fever began, and assumed a severe character. The assistant was supporting another patient who died soon afterwards, he felt the pungent sweat upon his skin, and was taken immediately with the symptoms of typhus. Two other cases of assistant nurses also originated from similar contact, but as they were persons of less intelligence, I have refrained from relating their cases as they offer less undoubted testimony. The wards in which the fever patients were placed, were large and well ventilated. We were at first disinclined to believe that the disease would prove contagious, but as soon as the fact was clearly proved, measures were taken to remove the patients not yet affected from most of these wards, and, if it had continued for a longer period, an efficient local quarantine would have been adopted. Dead bodies either did not communicate the contagion, or its influences was easily counterated by favourable circumstances. Both Dr. Pennock and myself, and several of the resident physicians were engaged nearly every day during the most intense prevalence of the disease in making long and laborious anatomical investigations, without suffering from the fever.

It is very clearly proved, that the typhoid fever, or dothinenteritis, is not contagious. Dr. Louis informed me that, in the course of his long experience of the disease, he had never seen a single case originating in an hospital. I have seen but one. The contrast between the fevers, in this respect, is obvious.—*American Journal of the Med. Sciences,*

PATHOLOGY, PRACTICAL MEDICINE, AND THERAPEUTICS.

On the Indications for the Use of Chlorine and Muriatic Acid Vapours in Diseases of the Air-Passages and Lungs.

By Professor Albers, of Bonn.

[In the years 1829, 1830, and 1831, Professor Albers instituted a series of clinical experiments in the Medical Hospital at Bonn, on the effects of chlorine vapours in phthisis, chronic bronchitis, and chronic pneumonia; these experiments were repeated in his private practice, during the years 1832 and 1833, and derived much value from the care taken to establish the diagnosis in every case with sufficient accuracy, a point to which very little attention had been paid by preceding writers on the subject.]

The chlorine vapour was applied in the manner recommended by Murray; or, instead of exposing the patient to vapour strongly impregnated with chlorine, for the space of a few minutes at different times in the day, he was kept the whole day in a chamber filled with very weak chlorine vapour. The vapour was produced by boiling chloride of lime and then heating it in a large dish, or by sprinkling it with muriatic acid; sometimes it was generated by pouring sulphuric acid on culinary salt. The following cases exhibit the results of Dr. Albers' experience.

Case 1.—A woman, aged forty-seven, of consumptive habit, and born of parents who died of consumption, was admitted into the hospital in January, 1830. Her symptoms were, cough of twelve months standing, progressive emaciation, hectic, great dyspnœa, copious expectoration of tubercular matter streaked with blood, sharp rapid pulse, anorexia, and constipation. She had pectoriloquy and mucous rhonchus under both clavicles, absence of the respiratory murmur at some spots, and bronchial respiration at others; respiration normal in the lower part of the right side only. There could be no doubt of the existence of phthisis in this case.

As soon as the hæmoptysis had ceased

under the use of acetate of lead and nitre, the patient was exposed to the chlorine vapour for the space of fifteen minutes four times a day. On the third day, she complained of violent constriction of the chest, copious expectoration, and stitches in the side, and was obliged to omit the use of the vapour. Two days afterwards the experiment was again repeated, but had to be discontinued a second time from the same cause. The only effect observed, was a diminution in the frequency and hardness of the pulse. During the use of this remedy she had observed a mild nutritious diet. She died five months afterwards.

Case 2.—A man, aged twenty-six, was admitted into the Medical Clinic in February 1831. His symptoms were cough of two years standing, (said to have arisen after exposure to cold,) latterly increased, and accompanied by expectoration; fixed pain in a circumscribed spot between the fifth and sixth ribs on the right side, about three fingers' breadth from the sternum; occasional attacks of dyspnœa, ending in copious expectoration of clear viscid mucus mixed with firm globular masses streaked with blood; habit of body normal; slight emaciation. Over the spot already noticed, sonorous and sibilous rhonchi were alternately heard; on the left side, the respiratory murmur was nearly natural; on the right side, particularly at the upper part of the chest, it was feeble, and bronchophony was heard at the spot where sibilous rhonchus was present. The diagnosis here recorded was "ulceration of the bronchial tubes, with a healthy state of the parenchyma of the lungs." Under the use of cupping, blisters, and expectorants, the pain disappeared, and the respiratory murmur in the right side became clear, but the cough and expectoration continued, with a slight sibilous rhonchus. The patient remained for a few minutes, four times a day, in a chamber abundantly filled with chlorine vapour. On the first day, he had violent constriction of the chest at each inspiration; on the second he was somewhat easier, but on the sixth his breathing was so much oppressed that he thought he should be suffocated, and the expectoration stopped. He was afterwards cured by other means.

Case 3.—I. J., aged twenty-six, born of healthy parents, and without any sign of the scrofulous diathesis, except a few swollen glands in the neck, placed himself under the care of Dr. Albers in 1831. For the last six months he had laboured under cough, at first dry, but afterwards attended with expectoration of greyish, fetid, tubercular matter; he had pectoriloquy under the left clavicle, and the usual signs of tubercles in the second stage, but no pain in any part of the chest. After having used the ordinary remedies for a fortnight, he was kept the whole day in a chamber filled with weak chlorine vapour. He suffered considerably at first from constriction of the chest, although there was no diminution of the cough or expectoration, but subsequently bore the vapour extremely well, and remained in it for twenty-three days without any remarkable inconvenience. During this period there was no diminution of his symptoms; the expectoration became more copious, and lost its fetid odour, and pectoriloquy became developed under the right clavicle also. Shortly afterwards, he was attacked with colliquative diarrhœa and died. Dissection exhibited tubercles in all stages, and ulceration of the intestines.

Case 4.—A man, aged forty-six, who had been two years under treatment in the medical clinic at Bonn, and who exhibited all the signs and symptoms of tubercular disease of the lungs in third stage, was exposed to the chlorine vapour in the manner already described. At first, the inspiration of the vapour was distressing, but afterwards agreed very well with the patient, and he continued to use it for the space of five weeks without any intermission. The expectoration became more fluid and less fœtid, the hectic paroxysms less regular, the pulse less excited, and the nights were passed more easily; the local symptoms, however, continued unchanged, and the patient sunk two months afterwards under the usual colliquative diarrhœa.

Case 5.—A man, aged thirty-three, who had laboured for six months under cough with copious expectoration of thick yellowish matter, placed himself under the care of Dr. Albers. His symptoms were dyspnœa, increased by motion; emaciation, occasional pains in the chest, and cough, which was so violent at night and in the morning that the patient was afraid of being suffocated. The stethoscopic signs were bronchophony over the whole of the right side, bronchial respiration, and mucous rhonchus at various spots in the same side, and clear sound on percussion. His appetite and digestion were good, and he had no hereditary tendency to phthisis.—*Diagnosis:* Dilatation of the bronchial tubes.—The patient was exposed

to a very weak vapour of chlorine, which he bore tolerably well for the first day; but on the second, he suffered great distress of respiration, and on the third the expectoration stopped, and his symptoms became so violent that he was obliged to give up the remedy. After eight days, during which the patient was brought back to his former state, a second experiment was made, but was followed by the same result; the sense of constriction and suffocation was so great, that the man could not endure it, and the use of the vapour was wholly abandoned. The patient died some time afterwards, and on opening the body, the lungs were found healthy, and the bronchial tubes generally dilated.

Case 6.—A man, aged twenty-two, and previously healthy, was attacked in the winter of 1831, after hard labour, with violent pain in the right breast, increased during motion and inspiration, dyspnœa, and short cough, accompanied by scanty expectoration, at first of a dark brown, but afterwards of a bright red colour. He was blooded three times, had forty leeches applied to the right side of the chest, and used several mixtures with more or less relief. After some days the cough increased, and he began to expectorate a fœtid matter of a yellowish grey colour; his fever diminished, but the dyspnœa and sense of constriction in the chest remained, with occasional stitches in the side. Under these circumstances he was admitted into the medical hospital at Bonn, and presented the following train of symptoms:—Chest well formed, right subclavicular region somewhat less prominent than the left, and tender on pressure respiratory murmur distinct in the whole of the left lung anteriorly and posteriorly; on the right side, it was absent in the subclavicular region; over the remainder of the right side it could be heard distinctly. When the respiratory murmur was absent, mucous and cavernous rhonchi were heard, and pectoriloquy, circumscribed to a small spot. Decubitus on the back or the left side brought on violent paroxysms of coughing; the expectoration was greenish yellow, very fœtid, and occasionally streaked with blood; the patient had regular attacks of hectic every afternoon, his pulse was always hard and frequent, his strength greatly diminished, and he appeared to be considerably emaciated.—*Diagnosis:* an ulcerating vomica in the upper lobe of the right lung. Under the use a mild diet, the constriction of the chest and bloody expectoration disappeared, and it was then determined to expose the patient for a few minutes each day to the vapour of chlorine. The first two turns, the patient was unable to remain in it longer than a minute or two, in consequence of cough and sense of suffocation produced by it, but by degrees he began to bear it better, and at the end of three weeks was able to remain a quarter of an hour in the room six times a day. During this period, the fever diminished, the cough became less violent, the patient's appetite returned, and the night sweats disappeared; the expectoration however remained the same, except that it contained less mucus. The patient became now anxious to return home, and left the hospital. In 1835, Professor Albers heard from a physician in the patient's neighbourhood, that he had progressively improved after he left the hospital, and was able to serve in the Landwehr without any further inconvenience.

Case 7.—A girl, aged twenty, and born of healthy parents, was attacked, in November 1830, with febrile symptoms, accompanied by dyspnœa, flying pains in the whole of the left side of the chest, hard short cough, and bloody expectoration. Under the use of local and general depletion the pains dimished in violence, but the cough became increased, and she continued to have copious expectoration of yellowish green matter, mixed with air bubbles, and streaked with blood. When seen by Dr. Albers, she seemed considerably emaciated, and exhibited indications of the scrofulous diathesis; but she had no fever, and her sleep and digestion were normal. Her pulse was hard, her cough violent night and morning, at other times less troublesome; expectoration copious, fœtid and of a greenish yellow colour, sinking in water; decubitus on the right side always produced severe paroxysms of cough. The left mammary and subclavicular were tender on pressure; at this spot, a distinct bubbling sound was heard, and bronchophony was slightly audible in the morning, but distinctly in the evening after copious expectoration. The respiratory murmur could scarcely be heard over the whole of the upper part of the right lung; in the left lung, the respiration was puerile.—*Diagnosis:* Ulcerating vomica, with inflammation of the surrounding pulmonary tissue. As the patient exhibited a great tendency to hæmoptysis, she was blooded, took nitre,

and used an antiphlogistic diet, until the expectoration no longer showed any streaks of blood. She was then exposed to the chlorine vapour, which, in the beginning, she could only bear for half a minute at a time, but subsequently was able to breathe it for an hour, three times a day, without inconvenience. Under this treatment the expectoration became diminished and lost its fœtid odour; the cough improved, and the mucous rhonchus disappeared, but the pectoriloquy remained. After using the chlorine vapour for six weeks, the quantity of expectorated matter was scarcely one-sixteenth of the original amount, she had hardly any cough, and the expectoration was quite free. She then went to the country and used a milk diet, and when examined again by Dr. Albers, in August, 1831, she was free from cough and expectoration, and capable of pursuing her ordinary employments. At the spot where pectoriloquy had formerly existed, there was still an indistinct bronchophony, and in the surrounding parts the respiratory murmur was very feeble. In other respects, the lung was quite natural.

The following are the conclusions deduced by Professor Albers from the results of his experience in numerous cases:

1. Chlorine acts as stimulant, but when the remedy gets into the blood, its effects are antiphlogistic. Its effects as a local stimulant are observable in every one of the foregoing cases. It produces a tickling sensation in the eyes, nostrils, and throat, and sense of roughness and constriction in the chest. If the throat of an individual who has been exposed for a long time to the vapour of chlorine be examined, it will generally be found of a deeper red than natural. These and other facts are sufficient to prove that chlorine vapour operates as a local stimulant. It is on this account more remarkable that chlorine when it gets into the blood, exercises an influence of directly an opposite nature. It diminishes the frequency of the pulse, calms excitement, and produces effects which may be termed antiphlogistic This difference of effect, however, before and after the remedy gets into the blood, is not peculiar to chlorine; it is common to many remedies of an antiphlogistic character, and is observed in nitre, tartar emetic, and many of the neutral salts. When there is no hæmoptpsis or violent local irritation present, chlorine inhalations may be used in diseases of the lungs and air passages; its stimulant effect gradually diminishes, and after some time the mucous surfaces of the lung become less sensible to its exciting influence.

2. In tubercles of the lungs, in chronic catarrh, in chronic inflammation and ulceration of the bronchal mucous membrane, and in dilatation of the bronchi, chlorine vapour is of no service, and in most cases will not be borne, in consequence of the irritation it produces. On the other hand, it has a very salutary operation in pure ulceration of the lungs or vomica. This state, however, is not to be confounded with suppurating pneumonia, to which the use of chlorine vapour is not so applicable. How far patients labouring under disease of the lungs may be adapted for using this remedy cannot be determined; much will depend on general irratibility and individual disposition, and the chlorine vapour should be always tried experimentally at first.

3. From the foregoing observations it appears, that chlorine vapour produces salutary effects in chronic ulcers of the lungs; this agrees with the results obtained in surgical practice from treating old ulcers with the solutions of chloride of soda and chloride of lime.

[The experience of Professor Albers coincides in some points with that of Dr. William Stokes, of Dublin. Dr. Stokes has always found chlorine inhalations prejudicial in phthisis, producing in all cases increase of bronchial irritation, dyspnœa, and arrest of the pulmonary secretion. In his trials of this remedy in gangrene of the lung, of which an interesting detail will be found in the fifth volume of the Dublin Hospital Reports, he has found it decidedly beneficial, correcting the fœtor of the breath and expectoration, and therefore calculated to obviate, not only the local, but also the constitutional symptoms connected with such a state of the lung.]—*British and Foreign Medical Review.*

THYMIC ASTHMA OF INFANTS.

Thymic asthma of children is more common than is generally supposed to be. Who has not seen infants come into the world with difficult respiration, and live only a few weeks or months, without being able to get the better of this affection? No pains were taken to ascertain the

cause of their death, life is so uncertain immediately after birth. The lost child was compared to a plant which could not take root.

Nevertheless, it was evident that the cause of dissolution was in the air passages, the disease bearing great resemblance to Millar's asthma, although its progress be slower, its attacks more frequent, and of shorter duration.

Dr. Marsh, of Dublin, having seen a child expire from suffocation, attributed its death to spasm of the glottis; but it was only a conjecture, which he did not attempt to verify by a post mortem examination. He did not think of the thymus, which only necessary to intra-uterine life, was to be effaced, or scarcely leave signs of its existence after birth. Dr. Marsh was mistaken.

Mr. Hood opened six children, victims of this spasm; found the glands of the thymus of an anormal size.

The publication of these pathological cases attracted the attention of observers; researches were made in scientific books, and in the works of Reicha and Vedries, written a century back, it was said that the asthma of children often originated in *hypertrophy of the thymus*. Since then, Dr. Frank has shewn that infantine asthma is often caused by extraordinary swelling of bronchial glands, and of the thymus.

In 1810, Dr. Brera verified this assertion on a child, a few weeks old, suddenly suffocated. Had the body not been opened, its death would have been attributed to Millar's asthma, so great was the similarity; but for what we know respecting this disease, that may be considered satisfactory, we are indebted to Dr. Koop, who has collected a great number of cases in his own practice, as well as in that of four of his brother practitioners; of which he composed a memoir, and read it at the academy of Heidelberg.

The characteristic symptoms he pointed out, were:—1st. Periodical suspension of respiration, accompanied by acute screams and great anxiety. 2nd. The return of fits of suffocation when the child awakes, screams, and tries to swallow. 3rd. The tongue being put out, and passing the lips permanently. 4th. The *trismus*, which is joined to these three symptoms, and terminates in death. Such is the form of infantine asthma. Dr. Koop attributes the disease to the extreme developement of the thymus, whose size weighs on the air passages, and the centre of the circulation.

Dr. Brera fully coincided with Dr. Koop, appreciated the value of these symptoms, and gives a full exposition of organic alterations; enumerates the remedies proposed by clinical practitioners, and says, that thymic asthma attacks children of three weeks, and more frequently those from four to ten months, till a year and a half old.

The noise of the inspiration is analogous to that of the inspirations in hooping cough; only it is more acute, more piercing. Children breathe five or six times, and the same noise is heard before they make an expiration, which is as noisy as in violent attacks of asthma; respiration is suspended, and if the child be not immediately suffocated, the acute cry is heard each time the little patient breathes till the respiration becomes free.

Accessary signs. — The other signs generally met with have nothing remarkable; they depend on difficulty of respiration, such as are seen in hysterics and asthma. Thus the body is thrown back; the face drawn, it is livid, then becomes pale; the nostrils are in motion, the eyes fixed, the hands cold, the thumbs drawn back, the excretions sometimes involuntary. The attack may last one, two, or three minutes; when it is over the child moans, and feels uncomfortable, but soon regains its usual temper, though it continues pale, is oppressed, and shows an inclination to sleep.

If you compare one of these young patients with children in good health, you will recognize it by its tongue being continually out of its mouth; and during the intermission of attacks, the motion of the heart is not distinctly felt. Any effort of respiration made by the child, either by screaming, laughing, swallowing rapidly, or even yawning, may bring on suffocation.

In the first instance, the fits occur every eight or ten days; they gradually become more frequent, and as many as twenty in four and twenty hours sometimes take place.

It is by no means uncommon to see the poor little patient perish as though it was struck by lightning; though infantine asthma mostly takes a chronic character, and terminates in epileptiform convulsions. The muscles, lumbricales of the hands, and the adductor of the thumbs, remain contracted. There is much to fear from the age of three weeks to twenty months; the symptoms preceding death are those of apoplexy, and asphyxia.

Where is the seat of the disease? The

nature of the symptoms of the disease, and the suddenness of death, could only tend to a supposition, before the scalpel was used, and made this discovery; all the phenomena of life emanate from the circulation of the blood, respiration, and innervation. The encephalus and its appendages, have a direct influence on the heart and lungs, which receive from them a similar impulse. These three organs perform their functions in mutual dependence, and form between them a compact union. If we examine the phenomenon of life, we shall find it proceeds from the encephalus to the heart by the nervous fluid; the blood impelled by the ventricles of the heart is the vehicle of life; and the lungs, by means of the air breathed, assist in reviving the blood. Thus do these three masterpieces act; they give a general impetus, and constitute life; each of these functions necessitate the action of the other, and cannot exist separately. If there be absence of air in the lungs, or absence of blood in the heart, or want of nervous fluid in the encephalus, death is the immediate consequence; the subject may pass, without warning, from health to death.

The practitioner might, therefore, foretell when he saw a child die suddenly, just as it awoke from sleep, or after laughing or gaping, that the primitive or consecutive cause of death, was in the alteration of the brain, heart, or lungs; and, in fact, the skin is livid, there are stases of blood in the brain and lungs; the heart is flabby and sometimes retains *le trou de Botal;* but the most constant and essential alteration is hypertrophy of the thymus; that is the root of the disease; the excessive developement of this gland is both in length and breadth, and mostly in thickness. The lungs are repressed, pushed backwards, and applied against the arterial trunks, veinous or nervous, with which they contract adherences, more or less extended to the neck and chest. It has been more than once observed, that the mass of thymus with edged borders embraced and strangled the organs.

The tissue of this gland is sometimes in a normal state, but more frequently hard, and red, without any appearance of inflammation, carnification, or any other degenerescence; if cut in two, a milky fluid escapes. Its weight varies from six or seven grains to an ounce.

Dr. Brera has seen the thymus two inches wide, extend from the thyroid gland, to the diaphragm, and in course strangle the trachea, the lungs, the heart, the vessels, the nerves, &c. Another time, it was found adhereing to the same gland, and covering the whole heart, so that the motion of this organ was very much restricted, indeed, nearly extinct. In a third case, the thymus was so lengthened, that it surrounded and strangled the jugular veins, the innominata and carotid arteries.

The prognostic is always alarming. There are no preventive means, and the disease left to itself, must terminate fatally. But our author thinks, that by assiduous care in the first instance, there may be hopes of arresting the disease. During the attack the child should be bent forward, and gently patted on the back, to facilitate the respiration; if the pulse be gone, efforts are made to restore circulation; the patient is placed horizontally, and cold water dashed on the face. In cerebral congestion, leeches are applied on the sides of the neck, and towards the superior intercostal spaces. After the fit, the spasms are relieved by small and gradual doses of laurel water, tincture of assafœtida, or musk, and cyanure of zinc.

When the child is strong, the seat of the disease, or the morbid condition of the thymus, is medicated by means of frequent local bleedings, energetic purgatives, either with laurel water, or hydrocyanate of morphia. With delicate children, bleeding and purgatives must be more scarce, and antispasmodics will be found preferable: for instance, the 20th part of a grain of musk, and acetate of morphia, three or four times a day. Regimen is the most to be depended on as a remedy for hypertrophy of the thymus, provided it be supported by derivatives and resolutives. Thus, benefit has been derived from stibiated pomatum, spread on the sternum; muriate of barytes, as a salve, is still better; and while either of these are applied, a blister should be put on one arm to day, and the next day on the other, without using cantharides. Internally, antimonials joined to mercurials, iodine, prepared charcoal, extract of hemlock and sunflowers, and preparation of gold.

The practitioner of Padova, relates three cures obtained in this manner; two in 1831, and the third this year. To justify the title given to this paper, it should be modified, and we ought to say, that thymic asthma was known, but reputed incurable, previously to Dr. Brera's publication.—*Continental and British Medical Review.*

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXXIII.

THERAPEUTICS.

Revulsive remedies—Acupuncture—Opinions of Roche, Sanson, Cloquet, Dantu and Pelletan—Its abstraction of galvanism—Its connexion with animal magnetism—Its influence on the passions—Nothing really abstracted by acupuncture—Needles of steel and other metals—Wallace and Dupuytren on the stimulant effects of acupuncture—Not dependant on sensation—Collyria, gargles, aud lotions in superficial inflammation—Caloric, electricity, and acupuncture in deep-seated inflammation—Their direct action—Indirect operation of epispastic remedies—Primary and secondary irritation—Irritation conveyed by sympathy—Nature of sympathy—Sympathetic flow of tears from irritation of the nostrils—Production of sneezing—Sympathetic contraction of the iris—Mechanism of setting the teeth on edge—Production of hæmorrhage of the gums—Production of coughing, salivation, and vomiting—Mechanism of respiration—Cause of hiccough—Laughter and convulsions from tickling—Influence of sympathy in health and disease—Cause of dyspepsia and gastritis—Operation of a stimulus in ophthalmia and orchitis—Beneficial effects of purgatives in inflammation—Cant of keeping the bowels open—The stools the least copious of all the excretions—Modern disease of diuretics—Dr. Pitcairn on diaphoretics—Greater effects of a day's sweating than a week's purging—Horse jockies in training—Vellication, urtication, sinapisms, and blisters—Counter-irritation—Unsupported dogma of Hippocrates—Improbable assumption of Darwin—Stimulant effects of tonics in inflammation—Revulsive remedies are stimulant—Do good by the stimulus, and not by the discharge—Astringent medicines—All medicines astringent—Purging by astringents—Intestinal and urinary astringents—Stimulant and tonic medicines—Difference between them—Effect of stimulants and sedatives on the brain—State of the brain in phrenitis and apoplexy—Action of mercury and antimony—Vegetable and mineral tonics—Different way in which they should be prescribed.

What we have said of the action of heat, may be said with equal propriety of the action of electricity, and perhaps more decidedly still of that of acupuncture. The wonderful advantage derived from this remedy, in some case of inflammatory disease, has been described at one time (as by Roche and Sanson), to its withdrawing a portion of the nervous fluid from the part affected; at another (as by Cloquet, Dantu, Pelletan, and others), to its abstracting galvanism; which, according to certain physiologists, is the same thing as the "nervous fluid" of the former authors. The effects of acupuncture have sometimes been ascribed (as by the modern followers of Messmer) to its exciting animal magnetism; and at other times (as by some of our British Journalists) to its operating upon the passions of the patient. Of these explanations, if such they may be called, the two first proceed upon the erroneous assumption, that something must necessarily be abstracted from an inflamed part, instead of added to it, in order to effect its cure. But, moreover, they fail in demonstrating that any abstraction whatever takes place in acupuncture. The evolution of a nervous fluid, distinct from galvanism, is altogether inconceivable; and the evolution of galvanism is found to happen only when the needles are of steel; whereas, the advantage of acu-

puncture is equally great when the needles are of any other metal. Galvanism, beside, is not evolved more freely from an inflamed, than from a healthy part. The third explanation, (that of animal magnetism,) is altogether untangible by persons of ordinary intelligence; and to the fourth (that which ascribes its efficacy to the passions) it may be objected, that there are some persons on whose minds the insertion of the needles makes little or no impression, and yet they are equally benefitted by the process. The explanation suggested by Wallace, and adopted by Dupuytren, is unquestionably the true one; that acupuncture operates, in inflammatory diseases, as a direct and strong stimulus. An exception has been taken to this solution;—that the advantage derived from the remedy, is more than commensurate with the sensation it excites. But this objection is not at all worthy of those who have advanced it, since it obviously confounds irritation with sensation; two functions which, however intimately connected, can never be made, in any degree, a measure of each other.

It appears, then, that collyria, gargles, and lotions (in cases of superficial inflammations), and caloric, electricity, and acupuncture (in cases of deep-seated inflammation) operate advantageously by communicating a stimulus to the affected vessels. Can we doubt, then, without great inconsistency, that when, instead of caloric, electricity, and acupuncture, epispastic remedies have been employed, they operate by effecting, indirectly, that which the remedies first spoken of effect directly? And if this be the case with respect to medicines applied to the neighbourhood of the part affected, it requires but very little extension of the same principle to persuade us that such is the case also with respect to all other remedies called revulsive; and that under their operation, it is always by sympathy with the parts primarily irritated, that capillary vessels, dilated by inflammation, become contracted.

It is quite unnecessary to enlarge here upon the nature of sympathy, or to investigate the means by which a primary irritation of one part, becomes secondarily a stimulus to another part. That such really is the case is indisputable, whether we can explain it or not; and the mere admission of the fact is quite enough for our present purpose. Thus, even in health, a primary irritation of the nostrils, frequently becomes a stimulus to the capillary arteries of the lachrymal gland, so as to produce a flow of tears; and a similar primary irritation of the same organ (the nostrils), or even of the eye, may become a stimulus to the muscles of the soft palate and of the abdomen, so as to produce sneezing. A primary irritation of one part of the eye (the retina), always so far stimulates the muscular or erectile tissues of another part (the iris), as to occasion a contracted pupil; while a primary irritation of the ear, sometimes so far stimulates the capillary arteries of the gums, as to effect what is commonly called "setting the teeth on edge," or even to produce hæmorrhage. In like manner, a primary irritation of the external auditory canal, or (what is much more common) of the larynx, often becomes so great a stimulus to the muscles of the glottis and of the abdomen, as to excite coughing; and a similar primary irritation of the mouth or fauces, may so far stimulate the capillary arteries of the salivary glands, or the diaphragm, the abdominal muscles, and the muscular coat of the stomach, as to excite a flow of saliva on the one hand, or vomiting on the other. It is probable, also, that on a primary irritation of the lungs, depends the stimulus of those muscles by which natural respiration is effected; and while a primary irritation of the diaphragm may become a stimulus to those muscles by which the lower jaw is depressed, so as to produce yawning; a primary irritation of the stomach may, on the other hand, so far stimulate the diaphragm, as to occasion a hiccough. Lastly, a primary irritation of the arm-pits, or soles of the feet, is familiarly known so far to stimulate the muscles of the glottis, the respiratory muscles, and most of the voluntary muscles of the body, as frequently to give rise to uncontrollable laughter; and almost to general convulsions.

But if instances of sympathy like these are numerous in health (and many more might have been cited), they are much more numerous in disease. Of these it may be sufficient, in this place, to call to mind how often any primary irritation of the stomach and bowels, becomes a stimulus to the capillary arteries of the nostrils, eyes, ears, and other organs, so as to produce in them innumerable diseases; and how often an irritation of the liver, kidneys, or uterus, becomes, in the same way, a stimulus to the stomach, so as to produce dyspepsia or gastritis

Whatever, then, may be the nature of sympathy, or the means by which it is conveyed, its existence is as certain as

that of any stimulus in nature; and it is surely more reasonable, after what has been said, to conceive, that when an emetic operates in suddenly removing ophthalmia or orchitis, it does so by communicating, through the stomach, a strong though indirect stimulus to the affected vessels; and not by abstracting any stimulus from them, or by counter-irritation, or by producing an evacuation or new determination of blood. In like manner, in the more numerous instances of inflammation in which purgatives are beneficial, we may, with justice, ascribe their effects to a similar cause; for purgatives are more generally useful than any other class of reputedly revulsive remedies, only because a greater number of organs sympathize with the bowels than with any other part of the body. The common cant of "keeping the bowels open," the propriety of which is so reiterated in almost every disease to which the body is liable, seems to me very inadequately to express the real object we should have in view, in the administration of purgative medicines; or the real nature of the service which they commonly afford us. To say nothing at present of counter-irritation, it is not easy to understand why nature should be habitually more tardy in her operations in the intestinal canal than elsewhere; or why it should be necessary for physicians to look so narrowly after the discharge of the stools (which are incomparably the least copious of the natural excretions of the body), while all the rest are allowed to shift for themselves. There will be but little doubt on reflection, I imagine, that the increased evacuation produced by purgative medicines, is, in general, rather an accident attending their operation, than the source of the benefit derived from them. Diuretic medicines are but rarely used in modern times, in the treatment of strictly inflammatory disorders; but with respect to diaphoretics, it is certain, as remarked by Dr. Pitcairn, that more may be done in the way of depletion, by doubling the quantity of halitus from the skin, for one day, than by doubling the stools for a fortnight. The truth of this is proved every day by horse-jockies, in the process of reducing their weight. But whether the advantage of these medicines, in the cure of inflammation, depends on the evacuation or new determination of blood which they produce, may, with great reason, be questioned. The greater quantity of fluid lost by prespiration in such cases, is in general compensated for by the more copious potations in which the patient indulges, so that the blood really loses little by the increased discharge; and that little, so slowly, that no sensible relief can be presumed to be thus afforded to the oppressed capillary arteries. But the preternatural irritation of the whole surface of the body, which attends upon this inordinately increased secretion, cannot be regarded as inert, with respect to the numerous organs with which this surface so intimately sympathizes; and in the stimulus thus conveyed to the inflamed part, most probably consist all the advantage which is derived from diaphoretic medicines.

But whatever we may think of the action of internal revulsive remedies, in the cure of inflammation, the action of epispastics, in all their various forms, applied to the neighbourhood of the inflamed part, can hardly be disputed. It was long ago observed, as I before remarked, that the advantage resulting from these remedies, in inflammatory disorders, was often in no degree proportioned to the evacuations which they occasioned. The old remedies of vellication or urtication, for example, or a sinapism, although they produced no discharge at all, were often found to be equally effectual in relieving the inflammation of a deep-seated part, as a blister which drew off some ounces of fluid. It was with reference principally to this effect of epispastic remedies, that the axiom above alluded to was established; by which remedies since called revulsive were sometimes made to operate, by withdrawing a stimulus from the inflamed parts. But inflammation consists essentially in diminished irritation; and therefore it is absurd to look for its cure from remedies the effect of which is still further to diminish it. Besides, it is quite inconceivable how counter-irritation can have that effect; or how the production of an irritation in one part of the body, well adapted to *convey* a stimulus to other parts, can have the effect of *abstracting* a stimulus from them. The unsupported dogma of Hippocrates on this subject, explains nothing; and it was to reconcile the supposed action of counter-irritants, with the sympathetic irritations just mentioned, that Darwin and others thought proper to presume that as there was between some parts a direct, so there was between others an inverse sympathy; in other words, that as the irritation of some parts was calculated to communicate a stimulus elsewhere, so the irritation of other parts, on the contrary, was calcu-

lated to abstract one thence. But who can be satisfied to adopt so strained and compromising an assumption as this, and one, moreover, which is so utterly improbable, in order to explain facts which admit of so unforced and consistent an application without it. It appears unnecessary further to insist upon this explanation with respect to epispastic remedies, and equally unnecessary to prosecute the subject through the remaining classes of errhines and sialogogues; since with respect to these also, arguments will readily suggest themselves nearly the same as those which have been already adduced, in favour of the presumption, that the beneficial operation of all the previously mentioned classes of remedies, in inflammatory diseases, depends on the stimulus which they communicate to the inflamed vessels.

It would contribute to strengthen considerably the opinion I have here adopted of the action of the remedies called revulsive, in inflammation, to urge the highly efficacious employment, in some cases of this kind, of tonic medicines the action of all which, in such cases, is indisputably that of stimulants. As examples of this kind, might be cited the action of cinchona, iodine, the muriates of lime and baryta, iron and arsenic, and the action of mercury in some stages of the inflammation of almost every organ of the body. The extent, however, to which we have already pursued the subject, prevents our enlarging.

The question at issue is not one of mere speculation, but involves practical consequences of considerable importance. It is obvious that very different rules will be requisite in the administration of the remedies called revulsive, if their beneficial action be that of effecting an evacuation or new determination of blood, or of *withdrawing* a stimulus, from those which will be proper if their beneficial action be, as above assumed, that of indirectly *communicating* a stimulus. Into an examination of these rules, however, we must decline entering at present, since we shall have abundantly fulfilled the object we proposed to ourselves, if we have succeeded in simplifying a subject which has always been involved in much obscurity, and have rendered at all probable the doctrines we have advocated. These doctrines are, that the operation of all remedies reputedly revulsive, is decidedly stimulant; and that the remark of the sagacious Stoll with respect to blisters, "non suppuratio, sed stimulus prodest," is equally true of all the other remedies in question.

2. *Astringent Medicines.*—Astringents differ from evacuants, only in the stage in which their effects are displayed. All medicines must constrict at first, and alum and kino, which are very powerful astringents, produce purging if given largely. The resins, balsams, and turpentines, act on the mucous membrane of the urinary passages. Dr. Home is fond of uva ursi for this purpose. Kino (pterocarpus erinaceus and encalyptus resinifera) and catechu (acacia catechu) act on the mucous membrane of the intestines. The acetate of lead is a very quick astringent, and is purgative in large doses. Besides those we have mentioned, the principal astringents of the British pharmacopœias are the sulphates of copper and zinc, the muriate of iron, the nitrate of silver, sulphuric and acetic acid, oak-bark (quercus robur), cinnamon-bark (laurus cinnamomum), great water dock (rumex aquaticus), galls (quercus infectoria), willow tree bark (salix alba, fragilis, or caprea), ash-tree bark (ulmus campestris), venice turpentine, mahogany-bark (swietenia mahogani), horse chesnut-tree bark (esculus hippocastanum), rhatany-root (krameria triandra), gum arabic (acacia vera), logwood hæmtoxylon campechianum), herb bennet (geum urbanum), agrimonia (agrimonia eupatoria), the red rose (rosa gallica), septfoil (tormentilla erecta), the purple willow-herb (lythrum salicaria), the pomegranate (punica granatum), red bark (cincona rubra, or oblongifolia), madder (rubia tinctorum), great bistort, or snake-weed (polygonum bistorta), and rhubarb.

3. *Stimulant and Tonic Medicines.*—Their mode of action is probably not essentially different from that of the first class—the evacuants. Stimulants and tonics increase the quantity of blood in the vessels of the grey matter of the brain, and they differ from each other only in the length of time their operation lasts, for stimulants act quickly, and are soon followed by reaction. In phrenitis there is too much blood in the grey matter of the brain; and the same effects are produced by all stimuli. In apoplexy there is too little blood in the grey matter, and the same effects are produced by all sedatives. Mercury acts as a tonic in ophthalmia, ptyalism, hepatitis, dropsy, dysentery, cholera, cynanche, in fact, in almost all inflammations. It is said to act by equalizing the circulation, but it must be by emptying the vessels, and stimulating

them to contract. Antimony also acts by evacuation. Vegetable tonics are given in large doses, at short intervals; mineral tonics are given in small doses at long intervals. The vegetable tonics are colomba root (menispermum palinatum), quassia and simaruba bark (quassia excelsa and simaruba), augustura bark (bonplandia trifoliata), pale bark (cinchona officinalis), chamomile flowers (anthemis nobilis), wormwood (artemisia absinthium), southernwood (artemisia sanctonica), tansy, the blessed thistle (centaurea benedicta or cricus benedictus), gentian root (gentiana lutea), buck-bean, the Carolina pink, and the smaller centaury (chironia centaurium. The mineral tonics are arsenic, iron, zinc, copper, silver, tin, bismuth, and the muriates of lime, soda, and baryta.

The officinal stimulants are white and black mustard seed, horse-radish, scurvy-grass (cochlearia officinalis, the cuckoo-flower, or meadow ladies' smock (cardamine pratensis), garlic, the onion, the (allium porrum), the resin of guiac (guaiacum officinale), the balm of Gilead, mastiche (ptstacia lentiscus) chian turpentine, balsam of Tolu (Toluifera balsamum), copaiba, balsam of Peru (myroxylon Peruiferum) storax and benzoni (styrax officinale and benzoni), gum-resin euphorbia (euphorbia officinarum), common turpentine, Venice turpentine, Canadian turpentine, and Chian turpentine, gum-resin, olibanum (juniperus lycia), Winter's bark, (drymis aromatica), guiac, rue, orange and lemon peel (citrus aurantium and medica), canella-bark (canella alba), seneka root, cajeput oil, cloves, pimenta berries (myrtus pimenta) pellitory root, bark, the bay, sassafras, camphor, the nutmeg, cascarilla bark (croton clentheria), contrayerva, black and long pepper (piper nigrum and longum cubebs (piper cubeba), savine, wake-robin, ginger, cardamoms (amomum cardamonium), and sweet flag (acorus calamus).

LECTURES ON SURGERY

By John Hunter, F.R.S.

Sympathetic Inflammatory Fever.

In consequence of considerable local injuries, as a compound fracture, or operation of consequence having been performed, that accident or operation shall be followed by inflammation, suppuration, &c. In consequence of this local injury fever shall arise in the system, which is universal sympathy, commonly called symptomatic fever.

Convulsions often arise from considerable local injuries called irritation. Permanent contractions are also often the consequence of local injuries or irritation, as tetanus.

If another mode of action takes place in the part sympathized with, namely, the cure of the injury, then the inflammatory sympathetic fever will subside.

Sympathetic Hectic Fever.—If parts have not a power to effect a cure, the constitution sympathizes in another way: it is teazed, as if conscious that the disease is incurable; and this teazing constitutes the greatest part of what has been called hectic fever. But if this incurable part is removed, the hectic fever will cease.

I have seen a wound in the knee keep a man awake several nights with pain and constant purging, and the patient becoming hectic; and by amputating the part he slept well the same night without opium, the purging immediately ceased, and costiveness ensued. A man had a wound in the elbow-joint, and was affected exactly in the same way, the pulse became slower and softer.

This universal sympathy, of whatever species, is greater when certain parts are diseased. The sympathetic fever will more readily take place from an injury done to the involuntary parts, as the stomach, intestines, testicles, &c., than if the same mischief had been done to the voluntary parts, as the muscles of the arm, for instance.

When vital parts are diseased, there is more sympathy among vital parts than among others.

Universal sympathy is greater if the injury received is further from the source of life, namely, the heart, than near it, provided it be a part of the same nature in both cases.

Sympathy is similar to sensation, action, motion, &c.; it can, and often does, cease instantaneously. Every sympathy ceases after the cause is gone, although its effects may remain, as tumefaction.

Some parts of the Body sympathize more than others.—The stomach appears to have this connexion with the body more than any other part. It would appear that the stomach was the seat of universal sympathy, sympathizing with every part of the body, and most parts of the body sympathizing with the stomach.

Every part of the body seems to have

some susceptibility of sympathy; but although there is universal sympathy between the stomach and whole body, yet the stomach sympathizes more readily with a complaint in the head than with one in the toe; more with the testicle than with many other parts. Also some parts of the body sympathize more readily with the stomach than many other parts, as the head, skin, &c. The skin sympathizing with the stomach is often very evident, from the effect some food has on the stomach, producing disease of the skin. A glass of cyder in some shall produce a flushing in the face immediately; and spirits, in the end, we know, produce inflammation and suppuration over the whole face, called pimples, especially on the nose. But whether the stomach loses part of this property I am not certain. It appears that other parts lose that susceptibility to sympathize with the stomach, as the skin, for that part does not seem to be so readily affected in the old as in the young.

The stomach sympathizes with the skin in many of its affections. Cold or wet feet will immediately affect the stomach. But the most striking instance is seen in the leech when its stomach is full of blood, by throwing salt on it, when, from sympathy of the stomach with the skin, it immediately rejects all the blood.

The intestines, especially the upper parts, have also sympathies over the whole body. Cases of worms show this perhaps more than any thing.

Observations on Sympathies of the different Principles with one another, producing similar and dissimilar Sympathies.—Continued sympathy is more commonly similar than the remote, as it is an extension of the same action, and commonly in a similar part which can act alike, as indeed most parts do in most of their common actions, although the peculiar actions of the part may be dissimilar. Thus, chancre on the scrotum, if it was to spread to the testicle, would produce the same mode of action in the testicle as in the scrotum, though it might at the same time produce effects peculiar to the testicle, as stoppage of the secretion, &c.

But the remote, local, or partial, is both similar and dissimilar, varying according to two circumstances: 1st, According to the nature of the part diseased and the nature of the sympathizer. 2nd, According to the species of properties in each part; as one property in the part diseased producing sympathy in another property in the sympathizer; disease in one part producing increased natural discharge in another part, which makes sympathy very complicated.

Let us take sensation as an illustration; although we have no sympathetic sensation, it being wholly delusive, yet sensation is an absolute guide. We know that the sensations in the brain are not similar to any other sensations in the body, at least not similar to many of them; also the sensations of the stomach are unlike to many of the brain, if not to the whole of them; also that many of the sensations of the stomach are not similar to sensations of other parts; also that all sensations of the stomach are not the same; also that an action of one part shall produce sympathy of another, whose mode of action is not similar: we must see therefore at once why the two modes of action become not similar, and why the sympathy is not similar to the cause, producing by this means another cause of complication, and consequently a variety in the first principles of sensation and action respecting sympathy. Again, difference of properties may produce dissimilar sympathies between two different principles, as the principle of life and that of action. For as sensation in one part may produce sympathy in a part whose actions are dissimilar from that other part, the sympathy produced will be dissimilar, and this resulting from the difference in the properties of the principle of action.

Also when we consider that many parts have more modes of action than one, as the stomach, which has a variety of actions, and of course is capable of producing a variety of sympathies in other parts, or can sympathize in a variety of ways with other parts, so that any one of these peculiar actions in one shall produce an action or sympathy in that suitable to the first action of the disease, which of course will be similar to the action of the diseased parts; while another action in the same part, and from the same principle, shall produce another mode of sympathy in the sympathizer; when we consider all these, they will at first sight appear inexplicable; as an illustration, we may observe what a variety of sympathies are produced from one mode of irritation, as teething, or worms in the intestines.

This connexion of every part of the body with the others, by sympathy, becomes one of the extensive principles of action in the animal œconomy, indeed is the basis of most of the compound impressions, affections, and actions.

Similar Sympathy.—Sympathy must

be similar to the affection of the part first affected when between parts whose affections are wholly similar; similar in action when between parts whose actions are wholly similar.

Sympathy may be similar in disease when between parts endued with a variety of affections and actions, provided they are endued with the same affection or action, as irritation in one part producing irritation in another, which thus produces inflammation, as an injection into the urethra producing swelling and pain of the testicle.

Continued sympathy, I believe, in all cases is similar to the disease, at least the action is so, even though it may spread to a dissimilar part. If inflammation attacks the diaphragm, and extends to the liver from continuity, that inflammation of the liver will be similar to that of the diaphragm. The same also if the disease extends from the testicle to the scrotum, &c.

Dissimilar Sympathy.—Sympathy is dissimilar when the affections or actions of the part impressed are not similar to the actions or affections of the part which sympathizes; thus, sickness at the stomach cannot produce sickness anywhere else; or, secondly, where parts diseased are susceptible of a variety of affections or actions of which the sympathizer is not; or, thirdly, even in parts where both the part diseased and the sympathizer are susceptible of the same varieties of stimuli and modes of action, which varieties in themselves are similar to one another, yet the sympathizer shall not be the corresponding affection or action to that which is excited in the part diseased; for example, a medicine taken into the stomach shall produce flushing of the face or inflammation, though the stomach is liable to the same disease as that of the face, namely, inflammation. So that in this case the difference does not arise from the mode of action being different from that of the stomach, only that the face does not run on to the same degree of action as the stomach. In inflammation of the liver the pain in the shoulder is different from inflammation, though the shoulder and liver are equally susceptible of inflammation. So that many parts have a variety of actions in themselves which are similar to some actions in other parts; therefore sympathy shall or shall not be similar to the action of the diseased part, being according to the stimulus applied to such part, or mode of action of the diseased part joined with the mode of affection. Therefore simple stimulus, action, or affection shall not only be the cause either of similar or dissimilar action, but both, according to the variety of affections and different parts that sympathize. A stimulus in the testicle shall produce sickness in the stomach, which shall produce vomiting, which is an action; so that a double and different compound sympathy takes places from the same stimulus.

Of the simplest Sympathies.—In vegetables we evidently see actions taking place in consequencs of actions having taken place in another part; but how far vegetables have a variety of properties and actions is not perfectly known; however, we can hardly doubt that they have a great many, for they produce a vast variety of effects, all these actions and effects arising from the principle of life. So that sympathies of vegetables may be complicated, and even dissimilar, but still more simple than the most simple animal. The succession of motions in a sensitive plant are no more than a succession of sympathies, or a succession of stimuli in consequence of those preceding. Here, then, we have exact similarity in the actions of the sympathizers with the part first acted on.

The most simple sympathy is perhaps to be found in vegetables, these being much more simple than the most simple animal. Vegetables have the same properties as animals without brain or stomach. Take away, therefore, the sympathies of the stomach with the body, and of the body with the stomach, and those between the brain and the body, reducing the sympathies of the animal to the simple properties of life, and an animal will be exactly similar to a vegetable; and this I know from experiments made on trees.

The motion of the sensitive plant I have said is produced by a succession of simple sympathies: something like this may be found in the more imperfect animals; but no animal can be so simple in all its sympathies, though it may in some. I shall at present suppose that every part of an animal is liable to be affected by the stimulus of agreeable or disagreeable sensations, and the more simple the animal the more likely it is to be under the same simple sympathy. A polypus is the most simple complete animal, and therefore must be most similar in its sympathies; but I can conceive a child in the womb to be still more so, being capable of one stimulus only, namely, want in the system; and perhaps it has no sympathy

even witht his, as it has no demand on any part of its body for the supply. This simplicity of stimulus is found not only in the simple animals, but in some degree also in the more complicated. The similar sympathies may be compared to the unison in sounds.

A polypus, though so simple an animal, is susceptible of four different stimuli, disagreeable and agreeable, propagation of the species, and want of repletion. In the last the stomach becomes the original sympathizer, and produces action in the other parts, so that here is a sympathy as in plants, but not so simple, for the stomach first sympathizes with the whole body when it wants repletion, and afterwards by a reflex sympathy the body is called into action and its little arms are erected.

Difference of Sympathies in the Sympathizer arising from difference in the mode of Impression.—Difference of affection and action of the sympathizer from that of the part affected does not always arise from difference in the nature of the two parts, but often from difference in the nature of the stimulant, or mode of impression; for a stimulant of one kind shall produce a mode of impression of its own kind in the part, from which shall arise a peculiar sympathy, while a stimulus of another kind will produce an impression of another kind, which of course will produce a sympathy of another kind in the part that sympathizes. Thus, when the stomach is stimulated in a particular way, the head shall ache, which is often the case when something is taken which disagrees with the stomach; and if stimulated in another way, the headache shall be removed, namely, by exciting vomiting. There will be, therefore, a variety in the actions of the sympathizer, arising from varieties in the specific modes of action, created by different stimulants, which may also produce similar sympathy in dissimilar parts, for parts very dissimilar in their natural actions shall be put into similar actions by sympathy. When the stomach is stimulated in one way, an action shall be brought on in the muscles of respiration and of the belly for the expulsion of the irritating matter; or if stimulated in another way, sweating shall be brought on in the skin; or if stimulated in another way, universal debility takes place; a blow on the stomach may even kill.

Hence it appears, that a stimulus of one kind produces sympathy in one part of the body, while a stimulus of another kind applied to the same part produces sympathy in another part; each mode of action in a particular part having other parts distinct from each other which sympathize with it.

I should suspect that specific inflammations are not able to give to the sympathizer their specific virtues, though they may be able to give them to others. In *continuous* sympathies the affection is similar, but not in the remote. A swelled testicle in venereal gonorrhœa does not partake of the specific nature of the original disease. In a cancerous breast, the glands in the axilla will often inflame and subside again, which they would not do if they were affected with cancer.

Sympathies of the body arising from affections of the mind.—The living principle of the body sympathizes with the mind. Strong affections of the mind will produce involuntary motions, even of those parts commonly at the command of the will. This must be by means of the nerves, for the body has no connexion with the brain but by the nerves. Fear will produce action of the involuntary parts, as purging, discharge of urine, &c.

I suspect that particular parts may sympathize more readily with the mind than others; therefore in such cases sympathies may be called local or remote, but they are, I believe, in most cases universal.

Sympathies of the Mind with the Living Principle.—The third principle, mind, is capable of sympathizing with the first, or actions depending on the living principle, for I should think that a state of the body often forms a state of the mind; however, it is not so readily affected by what does not produce sensation as by that which does. A man in pain not only feels pain as a sensation, but becomes depressed; or if the actions of life can produce sensation in any part, then the mind becomes affected, as when the whole body is in want of food the stomach sympathizes strongly with the whole, and the sympathy of the stomach causes a sympathizing mind. This is not sympathy immediately with the first principle, but sympathy with the sympathizer, or second, which, however, arose from the first. There are, however, instances where the mind sympathizes with the first, or life, for there are many instances where the mind is depressed without a sensible cause, called hypochondriasis, and also where the mind is light or easy without any sensible cause. I suspect that both these states arise from

the living principle being either diseased or at rest.

Sympathy of the mind with the voluntary parts is curious. If the voluntary parts are rendered useless, the will has no longer any power over them; it produces a state of mind which prevents the will putting the parts into action. Thus, when the tendo Achillis is divided, the person cannot put the muscles attached to that tendon into action by the will; but as soon as union takes place and grows strong, the mind allows the will to take possession of its action over the muscles.

Use of Sympathies.—Sympathies are designed for very important ends. They produce a communication between the three principles of the animal œconomy. The use of sympathy is often very evident. If their is an uncommon irritation in the lungs or throat, the muscles of respiration act with uncommon force, and the offending substance is thrown up. The irritation is frequently in the lungs, then it is transferred to the larynx, the muscles of respiration sympathize with the latter, and cough is excited either to get rid of the disease or of its consequence, which is increased and morbid secretion. In pregnancy the breasts become swollen, preparatory to their secreting milk in parturition. In labour the uterus is stimulated by the child, now become fit for expulsion, and the muscles of the abdomen sympathize with the uterus.

Sympathy in diseases, by becoming the symptom of disease, often leads us to the cause, especially when the cause is in a deep-seated part, as the pain in the knee when the hip-joint is affected.

We find that the sympathizer in some cases relieves the part irritated or under diseased action, as the testicle relieves the urethra; but there appears to be nothing gained by this, as the sympathy is the worse disease of the two.

By the sympathizer often relieving the part diseased, and sometimes even curing it, it becomes similar to a constitutional affection becoming a local one, as in the gout; and, as in the swelled testicle from gonorrhœa it often changes sides almost instantaneously, it is in this exactly similar to the gout.

Some sympathies are opposite in their action to the original action: pain in the liver is depressing, that in the shoulder rousing. Nature is incapable of sustaining the former, and sets up the rousing pain in the shoulder to continue life.

ADDRESS OF EARL STANHOPE, PRESIDENT OF THE MEDICO-BOTANICAL SOCIETY, AT THE ANNIVERSARY MEETING.

We have much pleasure in placing before our readers some extracts from the admirable address, whose title we have just indited, as it reflects great credit on the noble lord who delivered it, and who stands pre-eminent among the friends of Medical Science. The indefatigable zeal, and the ardent desire of the revered President of the Medico-Botanical Society, to promote its laudable objects, are rarely displayed by the high order to which he belongs, and deserve the warmest thanks of the Medical Profession. It would not become us to offer an observation on the high literary and scientific attainments of this distinguished nobleman, but we must take leave to applaud the deep interest he invariably evinces for the enlargement of therapeutical means for the alleviation of human suffering. He has cheerfully exerted his high political influence with the British and foreign courts, and obtained the great privilege for the Medico Botanical Society, of corresponding, free of expense, with all parts of the globe, and of receiving herbaria from every quarter; and so interested is he, on all occasions, in the prosperity of the society, that he gives an account annually of its proceedings, which embraces much varied and valuable information on medicines used in other countries, which are unknown to us, though highly efficacious. A few specimens from the address before us will confirm the validity of these statements, and we earnestly hope that we shall long enjoy the gratification of recording similar ones for the information and approval of our reader.—

"This society owes the station which it has now acquired amongst learned bodies, and the reputation which it enjoys, not to the individual who, during several years, has, through your favour, been its president, but to the assistance of those members of the medical profession with whom he has the happiness of being associated, as well as to the scientific eminence of its professors, and to the exemplary manner in which its other officers discharge their several duties. With the exception of the president, and of the treasurer, whose conduct is most honourable to himself, and most satisfactory to this society, all its officers, and nine of the

eleven other members of the council, belong to the medical profession, to which our pursuits cannot fail to be interesting, and will, I trust, be serviceable. In offering to all of them the humble tribute of my praise, I wish to take this opportunity of expressing our gratitude to our learned conservator, Dr. Farre, for the indefatigable labour which he has bestowed on the valuable herbaria of the society, and for the important advantages which have been derived from his laudable exertions.

"My learned and revered friend, the president of the Royal College of Physicians, has favoured this society with the communication of a letter which he received from Sir Robert Ker Porter, at Caraccas, transmitting a translation of the official report, made to the governor of Venezuela by the medical board, on the subject of a plant that grows in the central and southern parts of Columbia, and is called by the natives *Cuichunchulli*. It is administeren in cases of that deplorable disease the *Elephantiasis tuberculata*, or what may be more properly called the *Lepra tuberculata*, which happily is almost, if not entirely, unknown in Europe, but which is not unfrequent in some part of the new world, and has hitherto been considered as incurable. The medicinal properties of this plant reside in its root, which being reduced to powder is given is doses of half a drachm, and in some instances of two drachms and a half; and it is deeply to be regretted, that the extreme difficulty of procuring it, the insufficient quantity in which it has been found, and the high price which it bears, of £3 6s. per ounce, have in every case prevented a full and satisfactory trial of its efficacy. Experience has proved that it alleviates the symptoms of the disease, and the medical board consider it 'very probable that it will effect a cure in some cases.' But Dr. Arvelo expresses a contrary opinion, and the question cannot be decided until medical practitioners are furnished with an ample supply of this plant, which out to be cultivated for that purpose. The government of Venezuela is willing to encourage, by pecuniary assistance, the procuring of the plant; but its rarity is such as to preclude the expectation of obtaining it in abundance, and its price would of course be enhanced by the demand. Its cultivation is therefore an object of so much importance, that I earnestly hope it will soon excite the attention of those who possess the opportunities of administering the remedy, and particularly of Dr Bancroft, of Jamaica, who is a corresponding member of this society, and who is the author of a paper on this subject, which was read in 1835, before the College of Physicians and Surgeons in that island, and which is by far the best and most complete that I have hitherto seen. It is stated by Fuenmayor, in a report to the Secretary of State for the Interior in Venezuela, that this remedy operated simultaneously as a cathartic, diaphoretic, diuretic, emetic, and sialogogues; but although it produces nausea and sometimes vomiting, it seems to me doubtful whether it can strictly be considered as an emetic. In another paper, which is also prefixed to the report of the Medical Board, it is observed, that in all the cases of which the writer had any knowledge, and in which the remedy had been exployed, 'more than two months elapsed generally before any sensible effects were visible.' In the case, however, of a patient who had been ten years afflicted with the disease and had received no relief, considerable improvement took place in twelve days, and after having taken about thirteen drachms of this medicine, the supply of which was, as the Physician says, exhausted 'at the most opportune moment.' It is also observed, in the same paper, that in two or three cases the effects of the plant were 'small or almost imperceptible,' but that there was much alleviation in two other cases, in one of which a solution of corrosive sublimate was externally applied, and in which the trial cannot therefore be considered as satisfactory. Dr. Bancroft mentions also the case of one of his patients who received no benefit whatever, after taking, in about two months, five ounces of the plant. In the six other cases in which it was administered by him, in quantities of ten drachms to each, and in which he very judiciously abstained from employing any other medicines, he perceived no violent effects, but a slow improvement in five or six weeks, and the cure was, as he remarks, "scarcely begun," when the quantity of the plant that had been allotted to each patient was consumed. Senor de Aroche has given details of the case of a patient who, in twenty-five days, took above four ounces of the plant, without any permanent benefit; but he notices only the operation of the medicine, and not the alteration, if any, which had occurred in the symptoms. The Medical Board of Venezuela states in its report, that few remedies 'have offered better prospects of success at the com-

mencement of the trials;' and although this does not appear to have been universally true, the improvement that was experienced in several cases, and amongst others in two at Cuenca, respecting which no medical statement has been received, is such as to render most desirable a further investigation. The Padre Velasco, a Jesuit. relates of his own personal knowledge, that a lay brother of the order was, in 1754, cured f Leprosy by the Indians, and in a short time restored to perfect health; but he gave no description of the plant which was employed, by which it could be recognized, and by which its identity could be shown with that which has been subsequently used, and his statement is thought by Dr. Bancroft to be exaggerated, and in some respects unfounded. A medical practitioner at Bogota supposes this plant to be the same as that which is administered as a purgative to children, and the similarity in the name which led to this conclusion may naturally have been the cause of error. Too much praise cannot be bestowed on a French gentleman, M. Marcucci, for the zeal and perseverance which induced him to encounter many difficulties and dangers in obtaining this plant, the botanical character of which has been very accurately defined by Dr. Bancroft. It was called by Mutis the Viola *parviflora*, and by Ventenat the Viola *Ionidium;* but Dr. Bancroft is of opinion that although it "most nearly resembled" the Ionidium *parviflorum*, it is however a new species, and it was named by him, as a just tribute of respect to M. Marcucci, the Ionidium *Marcuccii*. Until the cultivation of this plant shall have afforded such a supply as would enable practitioners to form a just estimate of its efficacy in a disease which Dr. Bancroft, in a letter to my learned friend, Dr. Sigmond, describes as 'most intractable and grievous,' I would with all deference submit to their consideration, whether it might not be proper to try in such cases some medicine which would be compounded of drugs suitable to the climate, and which in its sensible operations would be similar to the *Cuichunchulli*.

"To my learned friend, Dr. Hancock, who collected, during his long residence in the new world, and has subsequently communicated to this society very valuable information, we are indebted for some papers of great importance; and, amongst others, for one on the medicinal properties and uses of a plant which is called, in British Guiana, *couru-watti*, and by the tribes of the interior, *conopia*. Unlike the plant which I before mentioned, it is found in abundance; but though Dr. Hancock has fully described it, he thinks that it is liable to be confounded with others, and he observes that, as the natives are very accurate in discriminating their more useful plants, it is requisite to attend to the names which they have affixed to them, and which are of far more service than their botanical appellations. It appears to be of the natural order of canneæ, and it may be the same as that which is described by Rolander; but Mr. Parker, of Liverpool, who is well skilled in Botany, considers it to be the Alpina *exaltata* of Meyer; and it is allowed by the greatest authority, by M. de Candolle, that much uncertainty prevails throughout this natural family of plants. Dr. Martius, of Erlangen, for whom I entertain the highest respect, thinks that the plant which produces the larger cardamoms, is, according to Rheedo, a species of alpinia; and it seems to deserve the attentive consideration of botanists, whether there is any, and what, real distinctions between the genera canna, costus, alpinia, and amomum. The leaves and fruit of the *couru-watti* are medicinal, as well as the root, which is diaphoretic, diuretic, and, in large doses, emetic. From the two former of these qualities it is very useful in dropsies; and Dr. Gill, of Demerara, knew cases of that description which appeared to be desperate, but which had been cured by a strong decoction or infusion of the root, with an addition of gin. It is also of great service in the hooping cough, as was shown by the example of a family consisting of twenty-one children, all of whom, except one or two, were attacked with the disorder, but recovered in a week or ten days, after taking small doses of the root prepared in syrup, and, thrice a day, a strong infusion of the root which operated frequently as an emetic, and caused a free perspiration. It is employed, moreover, in rheumatism, dysentery, asthma, and fevers, as well as in cases of poisoned wounds, by laying on them some of the bruised root, and by administering, internally, its decoction. The leaves of this plant are sometimes used to envelop the whole body, and produce a profuse perspiration; and other leaves, especially those of the arum *arborescens*, and of a species of sterculia, are applied in that manner, and for the same purpose. M. De Candolle states, in mentioning the aroideæ, that in cases of general dropsy

at Demerara, the Indians cover the whole body with the fresh leaves of the dracontium *partusum*, which occasions a slight vesication, but are not more rubefacient than many others. Dr. Hancock has no doubt that the aroideæ might be used, externally, with similar advantages to those derived from them by the Indians; and he recommends a trial, in aid of internal remedies, of the leaves of the rumex *maximus*, and also of those which are more stimulant, as the arum *maculatum*. He informs us, that very dangerous dysenteries have been cured in South America by producing perspiration through the employment, in this manner, of the leaves of the great climbing arum, a mode of treatment which he believes to be the most certain, though circumstances may require a deviation from it; and he mentions, in another very interesting paper, on the Indian practice of medicine in Guiana, that by externally applying the aromatic leaves of the alpina *odorata*, by warm infusions of sudorific plants, and by vapour baths, the patient, after an hour or two, falls asleep, and in general is, when he awakes, free from pain and fever. Those leaves which are not of a stimulant nature may be supposed to operate through the absorption of their exhalations, but the subject is, both physiologically and therapeutically, highly deserving of attention, and leads to considerations of great practical importance. In order to simplify the inquiry, and to arrive at more certain results, I would propose that trials should be made in several disorders, and particularly in those above mentioned, of leaves of various qualities, aromatic, rubefacient, &c., but without the employment of warm infusions, vapour baths, or other agents."

Earl Stanhope next comments upon the value of popular remedies, and his observations are so correct that we shall quote them at full length.

"The practice of the Indians in curing diseases is not to be slighted as unscientific, for it is founded upon nature and experience, and has been proved to be eminently successful. Mr. Whitlaw, who had ample opportunities of observation, states, that pleurisy, and all acute inflammations, were cured by them without bleeding; that 'the patients were convalescent frequently in a few hours,' and in general in a period not exceeding two days, that the same effects were produced upon the white population as upon the natives; and that 'scrofula, liver complaints, consumption, and cutaneous diseases, were unknown among them.' Dropsies, which had defied the medical art, have been vanquished by their simple remedies; and Dr. Hancock has, in several instances, known the Indians to make 'sound cures of limbs which had been condemned to amputation by European practitioners." It is not the skill and science which may be displayed in an operation, or the success which may attend it, that are either the most advantageous to the patient, or the most honourable to the practitioner; it is, on the contrary, that superior talent, when it is possible to exert it, which, by judicious treatment and by due attention to the constitutional disease, renders the operation unnecessary. The amputation of a limb cannot justly be considered as its cure, but as the lesser of the two evils to which the patient is exposed, and requisite in some cases to the preservation of his life, or, according to the expression of an ancient physician, '*detractio amissio partis est non sanatio*;' and I need not observe that a solvent for the stone would be very far preferable to the dangerous and painful operation of lithotomy.

"The important advantages which may be derived from popular remedies were fully appreciated by Dr. Osiander, who composed a most instructive work upon this subject, and has collected, with great industry, many interesting facts. He states, as the result of his own experience in a variety of cases, that remedies which appeared insignificant had, however, proved effectual, when the strongest medicines and the skill of eminent physicians had failed of success. Such was also the opinion of Hoffmann, who, after a practice of many years, found that the remedies, which he describes as '*vernacula, parabiliora, et domestica omnibus nota*,' were far preferable, both in their power and in their utility, to chemical preparations, and accomplished a safer and more certain cure. Many medicines, which now are universally prized, were originally only popular remedies, some of which were discovered perhaps by accident, as was lately the use of cotton in cases of burns, and some of them may have been derived from an attentive examination of the habits of animals, guided as they are by unerring instinct. It is stated by my learned friend, Dr. Sigmond, in his excellent paper on the *secale cornutum*, which is considered by Mr. Mitchell, after long experience, to be a 'safe and efficacious medicine,' possessing 'all the properties which a practitioner could

desire,' that it was not tried in this country till 1824, although it was mentioned by Camerarius in 1688 as a common remedy in Germany. The constant employment of any popular remedy shows that it must, at least occasionally, have been successful, and that it is deserving of accurate and scientific trials, made with that caution which may have been neglected in popular practice. I am aware that empiricism on the one side, and credulity on the other, have given great vogue to some pretended nostrums and universal medicines, which seem to assume that all diseases have the same cause and are susceptible of the same cure; but these are not what are termed popular remedies, and the former are almost unknown where the latter are often employed. As an example of the medicinal effects produced by vegetables which appear to be insignificant, we are told by Rust, that a young woman, who, till the twenty-second year of her age, had been afflicted with St. Vitus' Dance, and had derived no relief from medicine, was completely cured by living, during ten weeks, entirely on spinage. As an example that vegetables may possess other medicinal qualities than those which are generally ascribed to them, I may mention that an infusion of the common tansy is used in Russia to cure the jaundice, although the late Professor Geiger, whose name I cannot pronounce without grief for his irreparable loss, and the utmost reverence for his inestimable services, says that its medicinal qualities are '*nervina, anthelminthica, diuretica.*' A warm infusion of sloe leaves, which are so often employed for the adulteration of tea, has been administered in cases of scrofula; a decoction of dried peach leaves for the stone; and yew leaves, reduced to powder, for Hydrophobia. These, like other popular remedies, demand our attention; and the veneration which all of us must feel for the authority of Linnæus ought to add weight, if it were possible, to his admonition: '*discant itaque juvenes medici minime spernere, sed ea annotare accurate, quæ apud vulgum audiant medicamenta decantari.*'

Every one will agree with the noble author that popular remedies are often efficacious, and that many of them are now introduced into our pharmacopeiæ, and that many valuable remedies may be yet obtained from the same source, both in this and foreign countries.

THE ANATOMIST.

SMALL INTESTINES

are divided into duodenum, jejunum, and ileum.

Duodenum, the shortest portion of the small intestines, forms a curve in the concavity of which is situated the head of the pancreas; it is divided into a superior transverse portion, a middle perpendicular portion, and an inferior transverse portion. The superior part is covered by peritoneum on both its surfaces, and on this account is more moveable than the perpendicular or inferior portions, which are only covered on their anterior surface by this membrane.

Besides the numerous mucous glands which open on its interior surface, the apertures of the pancreatic duct and of the common biliary duct enter at its perpendicular division. This intestine differs not only in these particulars from the rest of the small intestines, but also in being much larger, more dilatable, more fixed to its position, in having a greater number of valvulæ conniventes (or circular folds of the mucous membrane), and in its muscular fibres being much stronger.

The duodenum has also been called *ventriculus succenturiatus*.

Jejunum and Ileum form the longest part of the intestinal tube, being in general from 28 to 30 feet in length; the upper two-fifths are given to the jejunum, and the remainder to the ileum, but there is no anatomical foundation for this arbitrary boundery as the intestines run into each other insensibly; and from the duodenum the remainder of the small intestinal tube gradually diminishes in thickness, has fewer valvulæ conniventis and exhibits less vascularity, so much so that the termination of the ileum is much thinner and paler than the upper part of the jejunum, and it is in these situations only that the differences between both are marked and striking. The mucous membrane of the small intestine is studded with glands of two orders, viz. the *glandulæ solitariæ* or *Pyeri* and the *glandulæ agminatæ* or *Brunnerii*. The solitariæ are disseminated like granules over the mucous membrane, and the agminatæ are placed in oval clusters. The fibres of the muscular coat of the small intestines take a circular and longitudinal direction, the latter being placed externally.

LARGE INTESTINE

divided into the cœcum, colon, and rectum, forms about one-fifth of the intestinal canal. It differs from the small intestine in its great size, in being sacculated, in having small processes along its entire course called *appendices epiploicæ*, in presenting three well defined longitudinal bands, in being thinner, and in having but few valvulæ conniventes. It is composed of an external serous coat, an internal mucous coat, and between both, a muscular coat. The fibres of the muscular coat take a circular direction, and some have contended that the longitudinal bands are also muscular, but in addition to their anatomical structure, the use these bands serve in throwing the intestine into a permanent sacculated condition renders it very probable they are of an aponeurotic nature.

Cœcum or *caput coli*, placed in the right iliac fossa and connected to the iliac and psoas muscles, is fixed in its situation by the peritoneum which only covers it anteriorly and somewhat laterally; it receives at its inner side the ileum which terminates in its cavity by a slit like opening, and which is guarded by two valves; these, in health, allow the transit of alimentary and excremental matter from the ileum to the colon, but not in the converse direction. The inferior valve or *ileo-cœcal* is the larger and placed obliquely; the superior or *ileo-colic* is smaller and rather horizontal; both are united at their extremities forming the *commissures*, from each of which proceeds a parmanent fold of mucous membrane called *retinaculum*. The *appendix vermiformis* is a small diverticulum which proceeds from the posterior part of the cœcum, it is the size of a goose-quill in diameter and from three to five inches in length, its orifice of entrance into the cœcum is guarded by a small valve: the cœcum has no valvulæ conniventes, but is thrown into irregular sacculi by the three longitudinal bands.

The colon extends from the cœcum to the rectum and is divided into four portions, viz. the right or *ascending* colon, the middle or *transverse*, the left or *descending*, and the *sigmoid flexure*.

The rectum extends from the sigmoid flexure of the colon to the anus; its upper third is covered by peritoneum, its middle third is only covered by this membrane upon its anterior aspect and sides, and its inferior third has no peritoneal covering. In the male subject the antero-inferior aspect of the rectum is connected to the inferior fundus of the bladder, the vesiculæ seminales, and the prostate gland, and in the female to the uterus and vagina. The rectum has no longitudinal bands and is not sacculated like the other parts of the large intestine.

SALIVARY GLANDS

are three in number, viz. the Parotid, the Sub-maxillary, and the Sublingual.

Parotid gland, the largest of the three, is bounded superiorly by the zygoma, posteriorly by the mastoid process and sterno-mastoid muscle, and advances on the side of the face partly resting upon the masseter muscle. It sends off deep processes, which fill the posterior part of the glenoid cavity, the fossa between the ear and perpendicular process of the lower jaw, and the intervals between the pterygoid, digastric, and styloid muscles; it often unites with the sub-maxillary gland. Its duct (*duct of Steno*) passes across the massiter muscle, pierces the buccinator muscle, and opens into the mouth opposite the second superior molar tooth.

A small gland (*soria parotidis*) occasionally is found between Steno's duct and the zygoma, the duct of which unites with that of the parotid gland.

Sub-maxillary gland, placed in the digastric space, and covered by the skin, platysma-moides muscle and superficial fascia, is of an oval figure and much smaller than the parotid. Its duct (*Whartonian*) turns round the posterior edge of the mylo-hyoid muscle, and runs forwards and inwards towards the *frœnum linguæ* at the side of which it opens into the mouth.

Sublingual gland, is placed between the mucous membrane of the mouth and the mylo-hyoid muscle, is the smallest of the salivary glands, and opens by several small ducts (*Rivinian*), which perforate the mucous membrane, reflected from the side of the tongue.

LIVER.

Situated in the right hypochondriac, the epigastric, and partly in the left hypochondriac regions, is the largest gland in the body. It presents an upper convex surface, a lower irregularly concave surface, a posterior thick margin attached to the diaphragm, and an anterior inferior margin which is free. The upper surface is unequally divided by the falciform ligament into a right and left lobe. The inferior surface presents the following fissures and depressions.

1. *Horizontal fissure* extends from a notch in the anterior thin edge of the liver backwards and upwards, defining the boundary between the right and left lobes of the organ; it is crossed at right angles by the tranverse fissure, which thus divides it into an anterior and posterior portion, the former containing the obliterated remains the umbelical vein, the latter the obliterated ductus venosus.

2. *Transverse fissure* extends from the horizontal fissure into the right lobe of the liver, it contains the trunks of the right and left hepatic arteries, the trunk of the portal vein, the hepatic extremities of the biliary ducts, the hepatic plexus of nerves and absorbents.

3. *Fissure of the vena cava*, situated to the right of the horizontal fissure and behind the transvere fissure, forms the right boundary of the lobulus Spigelii.

4. Depression for the gall-bladder, situated to the right of the lobulus quadratus.

5. A broad notch in the posterior thick edge of the liver, which corresponds to the right crus of the diaphragm. Besides these there are superficial depressions for the colon, right kidney, and stomach.

Lobes of the liver.—1st, right lobe, the largest; 2nd, left lobe, separated from the right by the horizontal fissure; 3rd, lobulus Spigelii, bounded before by the transverse fissure, and placed between the œsophagus and vena cava; 4th, lobulus caudatus extends from the lobulus spigelii along the right lobe; it lies posterior to the transverse fissure, to the left by the horizontal fissure, to the right by the gall-bag, its anterior edge being free.

Vessels of the liver.—1st, the hepatic artery; 2nd, the vena porta, which ramifies through the liver like an artery; 3rd, the hepatic ducts which commence in the pori biliarii; 4th, the venæ cavæ hepaticæ which return the blood of the vena portæ and hepatic artery to the vena cava; 5th, the absorbents of the liver.

Ligaments of the liver.—Besides the liver being invested with a proper fibrous capsule, it is also covered by peritoneum, which forms four of its ligaments, viz. 1st and 2nd, a right and left lateral triangular form, and connecting the right and left lobes to the diaphragm; 3rd, a suspensory or falciform ligament, which connects its upper convex surface to the right rectus muscle, and to the diaphragm; and 4th, the coronary ligament which connects the superior thick border of the diaphragm. There is also a fifth ligament (*ligamentum teres*), the obliterated umbilical vein, which extends obliquely from the umbilicus upwards and backwards to the anterior portion of the horizontal fissure.

Gall-bladder, pyriform in shape, and composed of an internal mucous coat, a proper fibrous coat, and a partial serous covering; is lodged in a depression on the under surface of the right lobe of the liver. Its large extremity, or *fundus*, is directed downwards and forwards, its upper extremity terminates in the *cystic duct*, about an inch and a half in length, which unites with the *hepatic duct*, formed by the union of the right and left ducts from the corresponding lobes of the liver. The common biliary duct thus formed by the cystic and hepatic ducts, is called the *ductus communis choledicus*, which is about three inches in length, and which conveys the bile to the duodenum.

PANCREAS,

A flattened oblong gland from five to six inches in length, similar in its formation to the salivary glands. It consists of a left caudal extremity, situated in the lower part of the left hypochondrium, a body which crosses, anterior to the left crus of the left diaphragm, the aorta and the vena portæ, to the right side; and a right extremity (*the head*) which is the largest part of the gland, and which is surrounded by the duodenum. Its duct of a whitish colour, extends along the centre of the gland from left to right, but lying near its posterior aspect; receiving the small ducts from the granules of the pancreas, it finally opens into the duodenum, close to the ductus communis choledicus, which it sometimes joins.

THE SPLEEN,

Connected to the large extremity of the stomach by blood-vessels and peritoneum, and situated between the stomach and ribs of the left side, is of a deep blue venous colour, and varies in weight from six to fifteen ounces, its figure being oval. It presents a convex surface, which corresponds to the ribs, and a concave surface towards the stomach, is enveloped by a proper fibrous membrane, and a peritoneal coat. Its interior is composed of *cells* seperated by *septa*, with *white granules* intermixed. It has no excretory duct.

URINARY APPARATUS.

THE KIDNEYS.

Two glandular bodies of an oval form situated, behind the peritoneum, in each lumbar region, lying upon the diaphragm,

psoas magnus, and quadratus lumborum muscles, and enveloped in a thick layer of adipose tissue. The right kidney, which is rather lower than the left, is below the liver, above the cœcum and behind part of the duodenum and the ascending colon; the left being bounded above by the spleen, below by the sigmoid flexure of the colon, and anteriorly by the descending colon. The extremities and outer border of each kidney are convex, whilst the inner margin presents a concave aspect called *the renal fissure*, and contains the trunks of its blood-vessels and its excretory duct, observing in general the following order, the veins anterior, the arteries behind, and inferior to both. Besides the adipose capsule which envelopes each kidney, it also has a proper fibrous coat which adheres closely to its outer surface, and sends prolongations into its interior, as far as the calyces.

Structure is of two kinds, viz. the *cortical* and the *tubular*. The cortical is highly vascular, of a brownish red colour, from a line and a half to two lines in thickness and consists of minute spherical granules, it is placed on the outer surface of the kidney and also sends prolongations inwards between the fasculi of the tubular substance. The tubular substance consists of minute capillary tubes (*tubuli uriniferi, tubuli Belliniani*), arranged in conical fasiculi forming from ten to twelve bundles: the bases of the cones being directed towards the external cortical substance, the apices towards the inner concave edge of the gland.

Papillæ is the name given to the nipple-like apices of the conical fasciculi. Each papilla presents numerous minute tubes, the apertures of the tubes of which the cones are composed; these apertures are not so numerous as the tubes, several of which are united in one common orifice.

The Calyces are small membranous sacs which surround one or more papillæ.

The Infundibula are three funnel-shaped tubes formed by the union of the calyces.

The Pelvis is the membranous reservoir formed by the union of the three infundibula.

The Ureters extend from the termination of the pelvis of either kidney to the bladder. Each ureter, about eighteen inches long and of the diameter of a moderate sized quill, passes behind the peritoneum, lying anterior to the psoas magnus muscles and to the iliac vessels, and gaining the inferior and posterior part of the bladder, passes obliquely between its coats and perforates its interior at the outer angle of its trigone.

THE URINARY BLADDER.

This musculo-membranous viscus when moderately distended is of an ovoid figure and occupies the lower region of the pelvis, behind the pubal symphisis, and anterior and superior to the rectum in the male, and the uterus and vagina in the female.

Ligaments of the bladder are divided into *true* and *false*. The true ligaments are four in number, viz. two anterior and two lateral. These, being nothing more than reflections of the vesical layer of the pelvis fascia, will be noticed when this structure is described. The false ligaments are five in number, viz. two posterior, two lateral, and one superior, and are formed by the reflections of the peritoneum.

The regions of the bladder are divided into six. 1st. *The superior region*, to which are attached the urachus and obliterated umbilical arteries. 2d. and 3d. *The lateral regions*, on which the vescical fascia of either side passes. 4th. *The anterior region*, the aspect of which looks towards the recti muscles, the pubes, and the triangular ligament of the urethra or the deep perineal fascia. 5th. *The posterior region*, the aspect of which looks towards the rectum in the male and the uretus in the female. 6th. *The inferior region* or *fundus* which rests on the vesiculæ seminales, the prostate gland, and the rectum in the male, and on the uterus and vagina in the female.

Coats of the bladder. Besides the partial peritoneal covering which invests all the posterior region and the posterior parts of the upper, lower, and lateral regions, there are also three *proper* coats, 1st. *The muscular*, flaccid externally, the fleshy fibres of which take three directions; the external running longitudinally, the anterior and superior fibres being stronger have been distinguished by the name of *ditrusor urinæ*, and those deep circular fibres immediately in connection with the mucous coat, which are best developed around the neck of the bladder. 2d. *The cellular coat*, and 3d. *The mucous*, which is exposed on opening the bladder. This coat is in general thrown

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* To gain a view of the parts just described, a perpendicular section of the gland should be made from its convex to its concave margin.

rugæ by the projection of the musuclar fibres.

The trigone or *vesical triangle* is the name given to a smooth space inclosed between the orifices of the ureters into the bladder and the vesical orifice of the urethra.

The uvula is a small duplicature of the mucous membrane on the under surface of the vesical orifice of the urethra, and corresponds to the third lobe of the prostate gland.

The urethra which terminates the urinary apparatus being in the male more connected with the reproductive organs, we shall defer its consideration until these organs are being described.

THE PERITONEUM,

The largest serous membrane in the body, lines the parietes of the abdomen, and invests almost all the abdominal viscera; like all serous membranes, then it is distinguished into two layers, a *parietal* and a *visceral*. The abdominal parietes being divided by a transverse incision, corresponding to the umbilicus, the uninterrupted continuity of the peritoneum, and the different productions it forms in its course may be thus demonstrated:—lining the inner surface of the upper section of the abdominal parietes, it ascends to the margin of the thorax, and lines the inferior surface of the diaphragm; from this muscle it is reflected on the spleen on the left side, on the stomach in the centre, and on the liver on the right side, forming its ligaments (*vide ligaments of liver*). From the transverse fissure of the liver the two layers, where the laminæ, which covered the convex and concave aspects of this organ, meet, it is conducted by the hepatic vessels to the lesser curvature of the stomach, thus forming the *gastro-hepatic omentum*, which is also called the *capsule of Glisson*, and between the two layers of which are contained the hepatic artery to the left, the ductus communis choledicus lying to the right, and vena porta, which lies behind and between both. At the lesser curve of the stomach the two laminæ of the gastro-hepatic omentum separate and enclose this organ, passing from its left extremity to the spleen, thus forming the gastro-splenic omentum, and at the great curve of the stomach, and lower extremity of the spleen, the two laminæ again meet and descend in front of the colon, and the small intestines, to the lower part of the abdomen; these two layers then turn upon themselves backwards, and ascend to the transverse arch of the colon, where they separate to enclose this intestine, thus forming the *great omentum*. Having enclosed the colon, the descending layers again unite and form the transverse meso-colon, which passes backwards to the spine; having arrived at the spine, the two laminæ again separate into a descending and an ascending layer; the descending layer passes into the lumbar regions where it is reflected upon the ascending and descending colon, forming the right and left lumbar meso-colon, and attaching itself to the left sides of the bodies of the lumbar vertebræ forms the arteria lanima of the root of the mesentery; from this fixed point it is continued around the jejunum and ileum, forming the peritoneal coat of these intestines, and returns again to the spine, forming the posterior lamina of the root of the mesentery. This descending layer of the transverse meso-colon having thus formed the mesentery, still pursues its course descending, and passes into either iliac region, and into the pelvis; on the right it attaches the cœcum to the right iliac fossa, thus forming the meso-cœcum, on the left side it attaches the sigmoid flexure of the colon to the left iliac fossa, forming the sigmoid meso-colon, and in the middle it connects the upper portion of the rectum to the upper and anterior part of the sacrum, forming the meso-rectum; still pursuing its course downwards, and covering the upper and anterior aspect of the middle third of the rectum, it is at length reflected on the posterior surface and sides of the bladder, to the superior region of this viscus, from which, and from the iliac fossa, it is reflected on the inner surface of the lower section of the abdominal parietes to the transverse incision, from the upper edge of which the description was commenced. Having thus traced the descending layer of the transverse meso-colon, the continuity of the ascending layer remains to be noticed;—ascending in front of the inferior and middle portions of the duodenum and of the pancreas, it is conducted to the liver by the vena cava on the right of Spigelian lobes, of which gland it becomes continuous with the peritoneum, which has been reflected from the diaphragm on the posterior aspect of the liver.

Foramen of Winslow.—By this opening the cavity which is between the layers of the great omentum, communicates with the general peritoneal cavity of the abdomen. It is of an oval form, being bounded anteriorly by the gastro-hepatic

omentum, posteriorly by the ascending layer of the meso-colon, superiorly by the liver, and inferiorly by the duodenum.

Inguinal Pouches.—As the peritoneum is ascending on the lower part of the abdominal parietes, it is thrown into four pouches, two on either side, by the obliterated hypogastric artery. The *external* pouch, between the ilium and hypogastric artery, is the largest, and corresponds to the external abdominal and the femoral rings.

In the female the peritoneum passes from the rectum on the upper and back part of the vagina, from which it ascends on the uterus, forming on each side its broad ligaments, and is reflected from the anterior part of the uterus to the back of the bladder.

The London Medical

AND

Surgical Journal.

Saturday, July 29th, 1837.

CAPITAL OPERATIONS IN SURGERY.—COMMENTS ON HOSPITAL OPERATIONS.

As journalists we have always considered it as our bounden duty, when employed in collecting Hospital Reports, not to permit our pages to be influenced by any individual, or set of individuals, for the purpose of publishing only those cases which they may conceive give a lustre to their practical talents, and conceal those unfortunate results, a knowledge of which is of such importance to all those engaged in the practice of their profession, and in an especial manner to the student. Looking back to the last few months, had not some appalling though highly instructive, surgical, operations been detailed in this Journal, the profession might have been led to suppose that no operations were performed either at the *North London, St. George's,* or *St. Thomas's* hospitals, which had not been completely *successful.* We are now led to make this observation, because it will be seen in our report of cases at the North London Hospital, that two unsuccessful operations had been performed some weeks ago at that charity, of which not the smallest notice was taken by that Journal which professes to give so impartial an account of our *London Pures.* We have always upheld that there is no rule in surgery more sound and better established, than that it is essential, before performing any important operation, not only that the patient should be deemed a fit subject for it, after the most rigid investigation, and that no operation, more especially one which endangers life, even when performed under the most favourable circumstances, should be undertaken without the patient previously undergoing a preparative treatment for a period more or less extended, according to his general health, or peculiarity of his temperament. Of all operations there is none for which it has ever been considered more necessary that the patient should undergo such preparation as that of Lithotomy; and the great success which has for a century been experienced by the Surgeons of St. Thomas's Hospital, has been chiefly attributed to the management of stone-patients by the nurses, in preparing them for, and attending to them after, operation. The distressing result of the operation for Lithotrity performed by Mr. Liston, which will be found in another page, we are inclined to attribute, not to his inexperience in performing the operation, for we are aware that great practice and dexterity are necessary, but to his not having subjected his patient to a course of preparation; the patient having been, in this instance, operated upon the second day after his admission, and after a long voyage; so that whatever advantages might,

in the opinion of some, have been derived from rest and a careful preparation, were unhappily omitted. The distressing result of the Taliacotian operation is still more remarkable, the patient's death having been occasioned by the bad state of his constitution at the time of the operation, he having gone through a succession of mercurial courses. Mr. Liston's non-success therefore in this case is not to be attributed to any want of preparation of the patient, but to the selection of a patient whose constitution rendered him the victim of an operation which is not usually considered to endanger life.

If our great Hospital Surgeons at St. Thomas's, St. George's, Guy's, and Bartholomew's, who, in their own opinion, are masters of the art, chose to pursue a line of practice at variance with the established rules of "sound chirurgical knowledge," to use their own phrase, we deem it a duty to humanity and science to comment upon it, and to warn others against a practice so often fatal to human life.

Our readers have fresh in their recollection the fatal cases at St. George's, St. Thomas's, the Westminster, and other hospitals, which have appeared from time to time in this Journal, and which warranted severe animadversion. It is not to be expected that every surgical operation can be successful; but every care should be taken, as far as human precaution admits, to prevent fatal results. Our British Surgeons have long been celebrated for their bold and successful operations; but they must not depend too much upon the knife, and too little upon constitutional treatment, and they should never forget the opinion of John Hunter, that operations are the disgrace of Surgery.

CHARING CROSS HOSPITAL.

In the last number of this Journal we laid before our readers a full account of the serious and most alarming imposition which was practised on Sir Astley Cooper and Sir Benjamin Brodie, by the medical officers of the Charing Cross Hospital, in order to obtain a recognition of the *charity* from the Council of the Royal College of Surgeons; and at the same time we referred with much pleasure to the honest and open avowal of the members of the Council, in which they declared their abhorrence of the whole transaction, and to the decided manner in which they publicly expressed their opinion, by immediately withdrawing the recognition which was thus surreptitiously obtained from them.

We again return to the important duty of calling the especial attention of the Council of Surgeons, of the Council of the King's College, and of the Governors of the Charing Cross Hospital, to the proceedings which have taken place during the past week at this notable asylum.

It is now well known to the public, that the office in the Charing Cross charity, designated by the imposing title of DIRECTOR, has been filled by Dr. Golding; and it is as equally notorious that this office of *Director*, in hands even less scrupulous, less economical, less high-minded, and having less self-interest to advance, is not only, as our esteemed (?) contemporary, the Gazette, forcibly expresses it, "*an absurdity*," but also a clog on the prosperity and advancement of any medical charity. Not only do we look upon this office of DIRECTOR as being injurious to any medical institution, but as being particularly so at the Charing Cross Hospital, where this "absurd office" is filled by one of the physicians. Indeed it is almost difficult

to conceive how a medical officer, engaged in the scientific and practical pursuits of an arduous profession within the wards of an hospital, as Dr. Golding must be, could devote time to the petty investigations, and all the minor circumstances which such an office brings with it; either the one or the other must be grossly neglected, or both imperfectly performed

The office of Director, when filled by a medical officer, also frequently brings its possessor into many disagreeable collisions with his colleagues; thus, judging from our own feelings, nothing must have given *greater pain* to Dr. Golding than the *active* part his *office* imposed on *him* to take, in getting out of his way the two most efficient officer, merely because these gentlemen expressed their candid and open opinions, that it would be highly advantageous to both institutions, particularly to the hospital, if a junction of *interests* could be effected between it and King's College. Yet with all these strange events before us, the office of Director is still in existence at this *charity*—still in active operation—still in the possession of Dr. Golding, physician to the hospital—and still, in all its pristine vigour, impeding the only possible chance there exists of redeeming its lost character, of wiping off the dark odium cast upon it by the Royal College of Surgeons, and of rendering it in the eyes of the public and the profession, what its well-intentioned donors expected it would be, a great means of relieving the poor afflicted with the additional misery of disease.

We have thus freely canvassed the *advantages* a *charitable* institution is likely to derive from the incumbrance of such an officer as that of a DIRECTOR, for the purpose of opening the minds of the governors of the Charing Cross hospital to the *real impediment* which stands in the way of the advancement of *their* institution, and the ends *they* had in view in giving *their* money to build and support it. Mr. Partridge, the junior, though not less able surgeon of this *charity*, seeing the inefficient state of the hospital under its present management, had the honesty and manliness, some days since, to endeavour to effect a junction between it and King's College. The object of Mr. Partridge in endeavouring to accomplish this junction was two-fold; first, by the union an increase of money would be obtained for the support of the hospital, and some chance afforded the medical officers of being able to keep up permanently the number of beds required by the College of Surgeons for a recognition; and, secondly, the medical classes of King's College, instead of exhibiting the meagre appearance they have done for the last three or four years, would be likely to get some *pay* pupils to their members.

Accordingly Mr. Partridge got a requisition signed by *thirty-nine* Governors, amongst whom were eleven noblemen, and two of Dr. Golding's *special committee*. This requisition was sent in on the fourteenth, and a meeting of the Governors was called, contrary to the laws of the hospital, in a *week* after its receipt, to take its contents into consideration. The calling of the meeting rested with the DIRECTOR and his SECRETARY; and with that extraordinary tact which is displayed on all "*special*" occasions, care was thus taken by calling the meeting so soon, that the principal persons who signed it, being absent from town, or engaged in the elections, could not attend, and thus for a time have the laudable intentions of Mr. Partridge been frustrated and his fondest hopes destroyed.

When next Mr. Partridge endeavours to effect an union between the hospital to which he is an ornament, and the King's College, he should bear in mind, that re-

quisitions have been in the hands of the AUTHORITIES of the CHARITY for months before a *convenient* time to call a meeting presented itself; and that he should first direct his attention to the law of the charity, if any exists, which specifies a definite time for calling a meeting after the receipt of a requisition, before he hopes to compete with the DIRECTOR and those *friends* and *benefactors* of the *hospital* who are always *at home*.

THE JOINT STOCK COMPANY IN GOWER STREET.

Our readers will startle at the fact, that the Council of the Gower-street College and the Governors of the North London Hospital, after deluding the public with professions of the great want of an hospital in the northern part of the metropolis, have now determined to christen the charity, the University Hospital; thus jobbing the public money to their own purposes, and lest this proceeding was not sufficiently outrageous, they have also determined to charge all pupils from other schools £12. a head more than their own students!! Such is the conduct of the mock liberals in Gower street. Their College being imperfect without an hospital, they first gull the public to build one for them, and as soon as it is established, they change the name, give it that of their own institution, and plunder all students whose means do not allow them to pay the exorbitant college fees of the liberals, in the shape of an increased hospital fee out of their pocket. They thus imagine they will gain pupils for their large fees of the College and the small ones of the hospital, by excluding all who enter to the various other medical schools whose fees are little more than one-half of the liberal university college, and they close their doors, over which is the motto "Patens omnibus scientia," against all who cannot pay their excessive and increasing demands. This barefaced job is the work of a clique, it behoves Lord Brougham, Mr. Warburton, Mr. Hume, Mr. Tooke, and other patrons of the Diffusion of Knowledge, and shareholders in the company, to prevent this gross and shameful attempt at monopoly.

GENERATION OF THE ANIMAL KINGDOM.

GENERATION OF ANIMALS.

What a vast, sublime, and at the same time delightful field, is the study of the generative functions in this class of living beings, at the head of which stands the human species! What curious and varied phenomena, all tending to the same result! What an incalculable profusion of different reproductive processes nature employs for the propagation of the numerous species which she calls into life! And, nevertheless, what unity and what analogy of propagative actions among all the individuals of the same class, from the bramble heath on which we tread, to that proud being who is so eminently qualified to be prince of animals, and king of the universe.

Though the study of the generation of animals presents to the mind of the observer a host of subjects capable of vividly exciting the curiosity, it still furnishes a host of gifts of the deepest interest, whether we consider the advantages of the beings under our empire, whether to serve our comprehension and explication of the numerous phenomena of human generation, on the mechanism of which nature would appear, at first view, to have thrown an impenetrable veil.

A complete history of the generation of animals, and especially of the infinity of modifications in this mysterious process of perpetuating each species, would be an immense undertaking, to the elucidation of which the entire life of one man would be insufficient, and which is perhaps beyond the comprehension of his natural faculties. What an infinite number of organizations and different species among the millions of living beings which the

earth receives on her surface, which fly in the air, and which swim in the unfathomable ocean! What an immense number of others whose organization, and consequently whose mode of reproduction escapes the eye, even assisted by the most powerful microscopes!

How numerous the springs, says Buffon, the powers, the machines, and movements included in that small portion of matter which composes the body of an animal! What relations, harmony, and correspondence between the parts! How many combinations, arrangements, causes, effects, and principles, which concur to the same effect, and which we only know by the results, so difficult to be understood; and they have not ceased to be marvellous, but on account of our not reflecting upon them. But, however admirable this work may appear to us, it is not in the individual the great wonder exists; it is in the succession, renovation, and duration of the species, that nature appears altogether inconceivable. The number of the species of animals is much greater than of plants, which amounts, it is said, to 56,000. There is, perhaps, a greater number of insects, most of which escape our observation, than there is of the earth.

ANCIENT AND MODERN THEORIES OF HUMAN GENERATION.

The animation of the first of the human species presents a question of physiology full of interest, on which men of the greatest genius have commented, though they have completely failed to solve it. The continuation and reproduction of our species has also occupied the reflections and investigations of the greatest philosophers and physiologists of ancient and modern times, some of whom have proposed hypotheses and theories replete with the grossest absurdities and errors. These hypotheses are about two hundred and fifty in number, and a brief notice of those which were best received, may not be uninteresting to the modern physiologist as well as general reader.

Plato thought that the reproduction of man, as well as of almost all organized beings, was effected by spectres and images extracted from the creative Divinity, which, by a harmonic movement, were arranged in certain numbers into perfect order. It was in the unity of the number three, that this great philosopher made the essence of all generation to consist. That which engendered, or the father, formed the first number; the being in which the conception was effected, the second number, and that which resulted, the offspring, the third number.

The opinion of Plato was, that all generation emanated from the Divinity himself, who, by a perpetual course of miracles, maintains and renews the living world; and, consequently, that man is, in the phenomena of reproduction, but an instrument of the consummate wisdom and power which govern the universe; and, secondly, that generation can only be effected by a male who furnishes certain principles to a female, in whose womb the result, or new being, is developed; and that this law equally governs the whole of the animal or vegetable kingdoms. This tri-partite harmony was considered an image of that mysterious power, the Trinity in Unity, which created and perpetuates all organised beings.

Pythagoras supposed that a vapour descended from the brain and nerves during coition, and formed the embryo, which developed according to the laws of harmony. (Diogenes Laer. L. viii. ix.) Impressed with this idea, the Scythians took blood from the veins behind the ears, to produce impotence and sterility—a practice recommended by Mr. Shandy to his brother Toby, when his ass was kicking violently on the recollection of the Widow Wadman.

Epicureus held that the perpetuation of man was effected by a mixture of the fluids of both sexes, which were mixed in the sexual organs of the female, animated, developed, and changed into a being resembling those who furnished them.

Lucretius and a great number of ancient physiologists admitted this doctrine. That great poet considered that there was a mixture of fluids, and that the most vigorous determined the sex, which is now the general opinion. His words are:—

Et commiscendo, cum semen forte virile
Fœmina commulsit subita vi corripuitque.
* * * * *
Semper enim partus duplice de semine constat.
Atque utrique simile est magis id quodcunque creatur.
De Natura rerum, l. iv.

He explained the resemblance of infants to their parents in the following manner:—he thought that whichever parent furnished the most elaborated and abundant seminal fluid would impress the lineaments and form on the offspring—that the most vigorous parent who would possess most genital power, would determine the

sex and physical powers of the infant, and, consequently, that the offspring would most resemble this parent, both in mind and body. But if the father and mother possessed equal power, the infant would resemble both.

Hippocrates and a vast number of his successors, as well as all modern physiologists, admit this doctrine.

Hippocrates, Pythagoras, Democritus, Aristotle, Anaxagores, Alcmeon, Parmenides, Empedocles, Epicurus, Galen, Avicenna, Zacutus, Lusitanus, Decartes, Venette, Rousel, and Buffon, acknowledged the existence of a fecundating sperm in woman; while Zeno, the Stoics, Hippon, and Fallopius, with many other celebrated anatomists, denied it. It is important to observe in passing, that the mucous fluid which is generally, but not always, effused by the uterus and vagina, during copulation, is not seminal or prolific, nor does it contribute to the formation of a new being. It is furnished by the lacunæ and glands of the vagina and neck of the womb, and by the lining or mucous membrane of these organs, and the Fallopian or uterine tubes. This fluid may be more or less abundant; and according to Magendie and others, is not effused by some individuals, and by others only very sparingly. Moreover it does not occur at the most excited moment, which is during and immediately after the male emission.

Galen related the case of a hysterical woman, who, on the slightest excitement of the genitals, had a mucous evacuation, accompanied by voluptuousness, and this also happened during sleep. Sauvage mentions the case of a young girl, of the most rigid chastity, who suffered from abundant vaginal discharges, even at the feet of a decrepid and disgusting confessor. (T. iii p. 277.) Loyer Villermay describes a similar occurrence at the access of hysteria. Such evacuations may also be induced by an excited imagination, by relaxation of the mucous membrane of the vagina, as in leucorrhœa or vaginal debility, and they may also occur in those who are sterile from diseases of the womb or ovaries; so that they cannot be considered seminal or prolific. The prolific fluid is supplied by a small vesicle or egg in the ovary, and is too trifling to be appreciated during coition, and scarcely even in the ovary on inspection after death. The ancient anatomists were therefore right, when they termed the ovaries *testes muliebres*—the organs which secreted the seed in woman, as the testicles do in man. This fact is also attested by Divine authority;—"I will place an irreconcilable bar between the seed of the woman and the seed of the serpent."

Hippocrates, who was unacquainted with human anatomy, supposed that the spermatic fluid of man was furnished by all parts of the body, and especially by the brain, as the principles of generation formed a new being, a miniature of our entire organization. As to the opinion, that the spermatic fluid was formed by the brain, that it descended along the spine to the loins and sexual organs, it is decidedly erroneous; for when the testicles, which secrete it, are removed, there is no seminal secretion. It is a remarkable fact, that the organ of love is now placed in the cerebellum by the followers of Gall and Spurzheim. The father of physic also entertained the opinion of Lucretius, that the resemblance of infants to either parent depended on a greater or less quantity of seed furnished by either. He held that a male resulted from a mixture of both seeds equally hot and elaborated; while a female was produced when the father or mother supplied a weak fluid, on one which is suddenly secreted. He supposed that on the mixture of both seeds the new being was formed in the womb. That this mixture absorbed heat, and passed from a state of fluidity to a certain consistence. Acted on by continued heat and vitality, the germ or new being, evolved a vapour which formed a round pellicle which enveloped it, and that it always received a new principle of life from the mother.

This pellicle, or fine membrane, formed an entire covering of the body, which finally was the skin, gave out a vapour which was condensed, and formed another membrane, and this part condensed a vapour into a fluid, by which the embryo was surrounded. In fine, he held that one point of this sac attached itself to the womb, by a spongy vascular union, through which nutrition was derived and carried to the navel of the fœtus by means of the umbilical cord or navel-string. It will appear hereafter, that this view of human ovology, though promulgated more than three centuries before the Christian æra, does not differ essentially, as regards the connexion between the embryo and mother, though otherwise erroneous, from that of the latest writers on embryology.

Aristotle admitted the female ejaculation, but denied that it contributed to the new being, that the male alone furnished the principles, while the female supplied

the necessary materials for their development, and these he considered, with Hippocrates, resided in the menstrual fluid. He said that woman furnished the marble, man was the sculptor, and the embryo the statue. (De Generat Animal.)

Averrhoes, Avicenna, and many others, adopted this doctrine; but the greatest number embraced the doctrine of Hippocrates.

Galen held that the embryo was produced by the seed of man, and that the materials afforded by woman nourished it. Diogenes, Hippon, and the Stoics, concluded that the embryo was produced by the male seed alone, and that the mother only served for its developement, as the earth does for the germination of grain.

Decartes supposed that the mixture of the two seeds produced a fermentation in which the embryo was formed; while Pascal and other chemists, held that the spermatic fluid of man was acid, and that of woman alkaline. (De Formatione Fœtus.)

Viussens maintained that both seeds contained spirits; and Van Helmont held that the female furnished seminal fluid, and the male a spirit or vital principle.

Maupertuis was of opinion that each seed contained an imperfect animal, or parts of an animal, which it finally resembled.

Empedocles had previously supposed with Aristotle, that the embryo existed in separate parts, in the seeds of both sexes, which, on being united, formed a regular order and a perfect whole. (Delamethria. Inst. Boerhaave.)

Harvey concluded, after innumerable experiments, that the germ was in the ovary in animals and plants; and was the first who maintained the doctrine, now universally admitted as correct—Omnia ex ovo. He supposed impregnation was effected by a kind of magnetic influence. (Exercitationes de Generatione Animalium. Quibus accedunt quædam de Partu; de Membranis ac humoribus Uteri et de Conceptione. 1651.) J. Fabricius proposed the theory of the Aura Seminalis. (De Formatione Ovi, &c. 1625.)

De Graafe contended that all animals were produced from an egg, maintaining the opinion *omnia ex ovo*, that germs existed in the ovary in the form of small transparent vesicle or ovules. (De Mulier. Organis, &c., 1677.) This doctrine was also admitted by Steno, Van Horn, Swammerdam, Malphigi, Harvey, Valisnieri, Ploucquet, and many other celebrated physiologists, and is now generally received.

The next hypothesis was proposed by Hamme, and advocated by Hartsoecker, Leuwenhoeck, Boerhaave, Keil, Cheyne, Geoffroi, Cardinal de Polignac, Lieutaud and a host of others, who maintained, that the germs existed in the seminal fluid of man, in the form of small living worms, which they called *animalcules*, that one drop of sperm contained millions of them, that projected into the cavity of the uterus during coition, one or more of them ascended into the uterine tube, arrived at the ovary, entered a vesicle, caused impregnation, and returned into the womb under the form of a small ovum or egg; and finally developed into an embryo. MM. Prevost and Dumas also maintain this doctrine in their recent work. They alledge that in a vast number of artificial fecundations, they never effected vivication when the animalcules were killed or destroyed. Spallanzani stated that he mixed three grains of the spermatic fluid of a frog with seventeen ounces of water, immersed the point of a fine needle in this fluid, and having applied it to the spawn of the female, caused impregnation. According to Pritchard's Microscopic Researches, 1834, a drop of fluid contains myriads of animalcules of different forms, which coroborates the former opinion. M. Raspail contends, that the animalcules are organic remains, or product of the decomposition of sperm. M. Virey regards them as bladders distended by a sort of pollen, which burst when they arrive in organs of the other sex.

The objections against this doctrine are, the hybrib procuctions; as the mule, procreated by different animals; the procreations between the stallion and the ass, and the jackass and the mare; and the error in supposing that only one of many million animalcules would be vivified and the rest destroyed. This would be contrary to the wisdom of the author of nature. Nevertheless, it has been lately proposed by an anti-population American that a woman who wishes to prevent conception, should inject the vagina immediately after coition, to destry the animalcules. This recommendation displays great ignorance, and still greater depravity; and it is as ineffectual as it is impracticable.

Vallisnieri supposed that man commenced his existence as a worm, which developed itself by degrees, as an insect metamorphoses itself. This hypothesis was also entertained by Bourguet, Wood-

ward, Lyonnet Rai, Schelhammer, Paitoni, Launai, Duverney, Schlichting, Ploucquet, Hamberger, Senac, &c., and even Linnæus and Buffon seemed inclined to adopt it. But Spallanzani has shown the falsity of this hypothesis by fecundating the ova or eggs of a frog without these spermatic worms.

The succeeding hypothesis was designated *epigenesis*, or the partial or successive formation of the fœtus, a system maintained by Aristotle and Galen, revived by Decartes, Harvey, Needham, Muller, &c. This was called essential power (vis essentialis) by Wolf, nisus formativus by Blumenbach, and plastic form by Cudworth, and is analogous to the attraction of parts and superstructure of organs proposed by Maupertuis, (Venus Physique, 1745.) Buffon almost revived this hypothesis. He held, that during the most vivid enjoyment a number of organic molecules was separated from every part of the bodies of both sexes, that they resembled the parts which supplied them, that when they arrived in the womb, they approached each other and united; but that those supplied by the eye, the nose, the heart, &c., of man, could only unite with those supplied by the same organs in woman. Every anatomist knows that there is no passage for such parts to the womb, and that this supposition is imaginary.

Bonnet, Spallanzani, and the Italian schools, maintained that the germs preexisted and were created since the beginning of the world, and were successively transmitted through innumerable individuals. According to this doctrine, Eve, the mother of mankind, possessed all the germs of men born, and to be born on the face of the earth; and every species of animals and plants, must possess the same power. Such is the system of evolution. MM. Virey and Velpeau object to this theory, on the grounds of the infinite divisions of matter, that a grain of corn might reproduce until it covered the earth; and the latter concludes that the ovary secretes the germ, (Traite Elementaire de l'art des Accouchmens, &c. 1829,) which is now the generally received opinion.

Sthal considers that the soul had the power of creating and organizing the fœtus; and Van Helmont admitted a formative spirit, a seminal being in the womb; and of the same genus of spirits as his Archæus in the stomach; both authors attributed marks and deformities to mental emotions. According to these authorities the sperm is a living fluid which transmits the soul and the moral and physical qualities of the father to the fœtus.

The ancients were of opinion that the ovaries in women were analogous to the testicles in man, and supplied a seminal fluid proper for reproduction. The opinion prevailed until the time of Steno, a Danish anatomist who first maintained that the vesicles in the ovary contained a liquid resembling that in the eggs of birds, were ova or eggs, which contained the design and lineaments of the embryo, which after having been fecundated by the seed of the male, swelled, burst, escaped into the uterine (Fallopian) tube, fell into the uterus, there to undergo all the developement of which the new being was capable.

The experiments of Fabricus ab Aquapendente, on the eggs of pullets, those of Harvey on bitches, sheep, and deer, already described, confirmed the opinion, and left no doubt that viviparous animals were produced from an egg like oviparous. De Graafe, Malphigi, Haller, Bonnet, and Spallanzani, after an immense number of experiments, confirmed the opinion of the pre-existence of germs in the ovaries. They concluded that the fecundation of the germ takes place in the ovary, and that the developement of the product of fecundation is a simple evolution and not an epigenesis as formerly supposed. Harvey was the first who maintained that an ovum, egg, or vesicle, dropped from the ovary after impregnation, and De Graafe subsequently proved this fact by precise experiments. Dumas and Prevost have lately confirmed it by recent experiments. Brissiere saw this egg or ovule partly in the interior of the uterine tube, whilst it still adhered to the ovary. This is the received opinion of all modern physiologists.

Generation—Procreation of the Germs.—The mysterious function of reproduction is still involved in obscurity. The transmission of life by parents in the animal and vegetable kingdoms remains as incomprehensible as ever.

Fecundation is effected differently in different animated beings. We have already observed that the generation in animals, insects, fishes, reptiles, birds, and vegetables occurs from the existence of a germ or ovum, and hence the truth of the ancient axiom omnia ex ovo—all generation is from an egg.

A question has been discussed but not as yet satisfactorily determined, what is

the seat of generation in the human subject; is it in the womb, is it in the oviduct or uterine tube, or is it in the ovary?

Almost all the ancients believed that the germs of male and female came in contact in the womb and formed the new being. Dr. Blundell and many recent physiologists suppose there is an electrical, or galvanic, or magnetic influence which effects generation.

"Has galvanism or electricity any share in the consideration of the Great Designer? Time, the discoverer of truth, may perhaps solve this important question!" (The Principles and Practice of obstetricy, &c., by James Blundell, M.D., with notes and illustrations by Thomas Castle, M.D., 1834.) This was previously advanced in the French Encyclopædia, *Art.* Generation. The great majority of modern physiologists entertain the opinion that fecundation is effected in the ovary. Prevost and Dumas adopt the idea of Buffon, Maupertuis, Aristotle, and Hippocrates, that the cavity of the womb is the seat of fecundation. Dr. Blundell concludes that the rudiments (ovum) and fecundating fluid meet in the uterus. This is contrary to the received opinion; and would not account for tubal, ovarian, and extra-uterine, or abdominal pregnancies. He admits "that the secretions of our sex reach to the ovaries, that there can be no full formation of the fœtus without the mixture of the two substances (male and female.) And it is clear that in ovarian pregnancy such deep penetration must occur. Perhaps the overaction of the genitals and the conveyance of the semen too far, may be the exciting cause on which the extra-uterine pregnancy depends." I cannot assent to the last notion, for were it true, extra-uterine pregnancy would be of common and not of rare occurrence; and I agree with those who ascribe it to relaxation of the uterine tube after impregnation in the ovary. Moreover, conception has followed the slightest possible penetration within the labia externa, even when the penis was not more than half an inch in length after amputation. In support of this hypothesis, some alledge that in all their experiments, they never found the animalcules in the uterine tubes or ovaries, that they found them in the cavity of the womb, that ovules must be imbedded in mucus which is supplied by the tube while conveying the ovum to the uterus; that they never could artificially fecundate ovules taken directly from the ovary, though nothing was more easily done on those which had passed into the womb.

In refutation of this conclusion it is only necessary to state, that Ruysch asserted that he found the spermatic fluid in the uterine tube of a young woman who was caught in the act of adultery by her husband, and stabbed to death; and Haller discovered the fluid in the tubes of sheep after having been slaughtered. This was probably a mucous fluid supplied by the lining membrane of the uterus and uterine tubes. Recent cases of semen being found in the cavity of the womb, are open to the same objection.

M. Velpeau well observes, in commenting on the preceding statements, that it does not follow, because the ova of a frog could not be impregnated unless enveloped in mucus, the same thing happens in women. It was not to be expected that the removal of an ovum with an instrument could be effected without such violence as would injure it and unfit it for impregnation. We must also bear in mind the existence of ovarian, tubal, and extra-uterine pregnancies which clearly prove that fecundation occurs in the ovary and not in the uterus. Mr. Stanley recorded a case of ovarian pregnancy (Med. Trans. vol. iv.) and Dr. Granville another, in which the fœtus was four months old. (Phil. Trans. 1820) M. Brissiere relates a case in which one half of the embryo was in the ovary and the other in the uterine tube. Others attest the development of the fœtus in the ovary, tube, and abdomen, among whom are Verheyen, Cyprianus, Saint Maurice, Courtial, Littre, Haller, &c. Every woman and every female of the mammiferæ is barren, if deprived of both ovaries, or when these are completely disorganized or when the tubes are impervious or ligatures applied to them before impregnation.

The experiments of Nuck, Haighton, and Blundell, afford the most conclusive evidence in support of the opinion, that fecundation occurs in the ovary. Nuck applied a ligature round the tube between the womb and the ovary, immediately after copulation, he killed the animal a few days afterwards and found the ovum arrested by the thread. Dr. Haighton tied and also divided the tube in rabbits, and invariably observed that no fecundation occured in the ovary on the side on which he operated (Phil. Trans. vol. lxxxvii). Dr. Blundell's experiments are described in the Medico-Chirurgical Transactions, in his work on Generation,

and also in the edition of his Obstetricy, by Dr. Castle. He divided the uretus of a rabbit, so as to obliterate its cavity; and he also obliterated the upper part of the vagina. The animal recovered, and was subjected to the male, but no fecundation took place, though there was an attempt at it, for copora lutea were developed, and a quantity of water found in the uterus! His experiments were numerous; and led him to the conclusion that the germs of the male and female rabbits, and perhaps of all other animals must come in contact to effect impregnation. From these experiments he infers that corpora lutea may form in rabbits independently of the full excitement of the genitals—that the mere absorption of the semen from the vagina by means of the lymphatics is sufficient for the purposes of formation. In one vaginal experiment, the access of the semen to the ovaries being interrupted, impregnation was not accomplished, though the animal admitted the male as many as fifty times, mostly at intervals of two or three days or more—a quantity of water was found in the uretus, as in other experiments. In this case the male fluid must have been frequently absorbed from the vagina.

The observations of Dr. Montgomery of Dublin, are directly opposed to the opinion that corpora lutea exist without impregnation (Cyclopædia of Practical Medicine, *Art.* Pregnancy, Treatise on Pregnancy, 1837.) The theories of generation now maintained, are three:—1. The transmission of spermatic fluid of the male through the uterus, uterine tube, or oviduct to the ovary, a vesicle, ovum, or egg of which is vivified and passes into the womb to be developed, until the expiration of the ninth month, when it is born and becomes an independent being; 2. The transmission of subtle vapour or effluvium from the male semen (aura seminalis) through the same parts to the ovary, the impregnated ovum passing into the uretus to be developed in the manner before stated; 3. The absorption of the seminal fluid of the male from the surface of the vagina.

The transmission of the spermatic fluid through the uterus, uterine, tube, or oviduct to the ovary, a vesicle, ovum, or egg, is vivified or fecundated and passes into the womb to be developed until the ninth month or fortieth week, when it is born, and becomes an independent being. This is the most general opinion.

During the act of copulation the external and internal genital organs of both sexes, which are all supplied by nerves from the same source, are excited and stimulated, the vagina closes tightly on the penis, the uterine orifice is in close contact with the orifice of the male urethra, the tube or oviduct becomes straightened and erected, and its loose or floating extremity (corpus fimbriatum) seizes on the ovary, and allows the male fluid after its injection into the cavity of the womb, to advance through the tube to the ovary, by a species of vital attraction or suction. The moment the spermatic fluid arrives at the ovary, which is seized by the extremity of the uterine tube, it acts on and vivifies one or more ova or ovules, and forms the new being, or beings.

The fecundated ovule is now the seat of a new vitality, it becomes swollen, reddish, and finally bursts its membrane, and detaches itself from the ovary. The fimbriated extremity of the uterine or Fallopian tube is still in contact with the ovary, and favors the passage of the newly formed being, the embryo, into the uterus to be developed until the expiration of the ninth month, by a series of the most extraordinary changes. When the extremity of the tube loses its hold of the ovary, which may happen according to some writers, from excessive voluptuousness, fear, &c.; the ovule on bursting its covering will fall into the abdomen, there develope itself as an extra-uterine pregnancy, and finally destroy the patient unless relieved by gastrotomy or the first part of the Cæsarian operation. It is, however, a fortunate circumstance that abdominal and tubal pregnancies are of rare occurrence. A case of this kind was successfully treated in London, 1836.

Almost all physiologists are of opinion that the uterus possesses a power of suction and imbibes the semen after its ejaculation or a vapour arising from it. Ruysch, Haller, Lewenhoeck, Hartsoeker, Hunter, and others discriminated the spermatic fluid of the male in the uterus; a fact which is denied by others, and cases are on record in which the orifice of the womb was permanently fixed external to the genital aperture, through which fecundation happened. Dr. Ashwell and Mr. Kingdon mentioned cases of this kind at the Medical Society of London a few years since.

The Fallopian tube is said to become erected during the orgasm of coition, to embrace the ovary, which embracement was observed in different animals after coition, by Haller, De Graafe, and Cruikshank; in women who died soon after

coition by Littre; and in a virgin, who died of hysteria, by Vallisnieri. The peristaltic and anti-peristaltic motion of the tube, the conveyance of the semen to the ovary, and the reconveyance of the impregnated ovum to the womb, have been proved by ocular demonstration, by Beclard, De Graafe, Prevost, and Dumas, and by the experiments of Nuck and Duverney, who arrested the impregnated ovum in the tube, by a ligature applied three days after coition; again by the tubular and abdominal pregnancy, in which the tube has allowed an ovule to escape (Lallemand). It is probable that the increased dilatation of the tube, after fecundation, is intended for the retention of the ovum for some time. How can we explain the fact, but that one tube only is concerned in conception? What was the object of nature, in forming two tubes, two ovaries, two testes, two seminal receptacles, if one organ in each sex be sufficient for the propagation of the species? Or are the double organs in each sex intended for the formation of the distinct sexes?

(To be continued.)

AN EXPERIMENTAL INQUIRY RESPECTING THE PROCESS OF REPARATION AFTER SIMPLE FRACTURE OF BONES.

By Mr. Bransby Cooper:

The immediate effects of fracture of bone, and the process employed by nature to repair the injury, have at all times excited the curiosity and engaged the attention of physiologists; but, probably, at no period has the subject engrossed so large a share of professional inquiry as it has done of late years.

Many most distinguished surgeons, both on the continent and in this country, have zealously entered into the investigation; and, as might have been expected, much valuable information has been the result. Sir Astley Cooper has largely contributed to the exceedingly deficient and disunited materials, heretofore possessed; his additional knowledge of the subject having been derived from the examination of the spontaneous efforts of nature towards the reparation of a fractured bone, watched through the successive stages, as they occurred, in the progress of repeated experiments upon animals.

Nevertheless, it is fairly admitted, that there remains much to be done—that there are many points upon which physiologists are at issue; and that further experiments are required, to place the subject in a clearer light, and on the foundation of sound principles; as, still, too many are inclined to consider the phenomena, attending the accidents incident to bone, as entirely different from those, accompanying the action set up by nature in the reparation of the softer parts; whilst, on the contrary, by strict investigation, it will be found that the same laws obtain in both instances; modified, however, in the re-production of bone, by the deposition of a portion of earthy matter, essential to the physical character of that hard and solid structure.

A recent conversation held with Sir Astley Cooper, led me to repeat a series of experiments, which he himself had many years ago projected and performed, and from which the contribution contained in this paper has arisen; and as no one has thought more deeply, or experimented more extensively, on this subject, than Sir Astley Cooper, so did I find that no one was more anxious for its farther investigation, or more sanguine in the expectation of some new light being thrown upon the process by which nature repairs a solution of continuity in the osseous system.

It was at his recommendation, therefore, and with the advantage of suggestions derived from his experience, that I undertook the task of repeating his experiments; the results of which appear to me to possess some novelty, and are certainly such as I had not altogether anticipated. To minds easily satisfied, and to those who think that the present subject has been amply illustrated and explained, it may reasonably be suggested, that even to go over old ground is often profitable, and, perhaps, in the pursuit, something unexpected may present itself.

As the experiments, necessarily entered into with a view to the investigation of this interesting point, are, of course, numerous, it must not be expected that the subject is to be completed in one article. My object is, moreover, to give a faithful detail of the appearances exhibited, from day to day, in the limb of an animal subjected to experimental fracture, and to present an accurate delineation of the minute alterations which occur in the dif-

ferent structures in the neighbourhood of the fractured bone; deferring theoretical comments on the facts observed, until the completion of my experiments will authorize me to form a just deduction from the results, which I shall then be enabled to lay before the profession. Nevertheless, from the experiments already made, I feel that I shall be justified in detailing the views I have formed relative to the first efforts of nature towards the reparation, by those tissues immediately influenced by the injury.

I shall proceed, therefore, to the description of the appearances, as they presented themselves upon examination in the experiments, without intending to give the minute account of each dissection; as, in some instances, it would be found that the advance towards reparation of the succeeding experiment varied but little from that of the one immediately preceding;—this circumstance depending, apparently, upon the mode of producing the injury, as well as the age and constitutional powers of the particular animal. In the choice of the rabbits to be subjected to the experiments in question, care was taken to procure them as nearly as possible of the same age and size; and the thigh bone I considered the best adapted for the investigation of reparative power, in consequence of its being so perfectly surrounded and deeply imbedded in softer structures, which, it seemed to me, would be found to assist greatly in the process of restoration.

The fracture has been produced, in each experiment, in such a manner as to injure the soft parts as little as possible; and the dissection of each animal has been carefully performed about an hour after its death, with the intention that the position of the fractured extremities of the bones might be similarly influenced by the subsequent contraction of the muscles.

Mr. Cooper made eight experiments upon rabbits, from which he draws his conclusions:—

On taking a retrospective view of the various effects produced by fracture of a bone, as detailed in the foregoing experiments, it will be my object to recapitulate the appearances, in the order they presented themseves; by which means we may be enabled to discover the process which nature adopts for the reparation of injured parts, when the work of restoration is left to her alone. The first effect produced in the solution of continuity of bone—as, indeed, must inevitably occur in lesion of any vital parts—is, extravasion of blood; and even this first effect involves a very important question, as to the purpose to which that blood is to be applied. The immediate effect of this extravasation is, to infiltrate the cellular membrane in the vicinity of the fractured extremities of the bone and of the surrounding muscles, with blood, which, by its coagulation, immediately produces two desirable results; first, in effecting a degree of stiffness in the injured limb, which prevents the tendency to motion; and, secondly, in restraining a further hæmorrhage, by plugging up the torn blood-vessels, both of the bone and of the softer structures. The firmness of the coagulum filling up the cancelli of the two fractured ends of the bone is the principal feature to be observed, and I believe I may say, the first step towards reparation, after the infliction of the injury. So soon as the coagulum has effected this important object of staying hæmorrhage, its fluid parts begin to be absorbed, and the tumefaction of the limb to diminish; while the firmer parts of the blood still produce the beneficial effect of giving solidity to the limb. Little change beyond this is to be observed forty-eight hours after the accident, the coagulum only being found firmer than on the examination made at the end of the first four-and-twenty hours. On the third day, the surrounding tissues begin to be inflamed, from the irritating influence of the coagulated blood; as evinced by the disposition of coagulable lymph, by which the muscles become connected to each other, and their power of contraction diminished, leading to a further means of preventing motion in the fractured ends of the bone. At this period, also, it is to be observed that the coagula, closing the cancelli of the two ends of the bone, are firmly united to the medullary membrane, as well as to the surrounding deposited lymph; and must, in some degree, therefore, assist in maintaining a state of rest. The inflammation induced in the surrounding soft parts still continuing, leads to the effusion of more adhesive matter: at the same time, the ecchymosis becomes less, and paler in colour, and the general surrounding tissues more distinct. From this period, the effused adventitious matter begins sensibly to thicken, and to acquire increased firmness; from a gelatinous effusion, forming a distict tumour around the fracture, of sufficient solidity to limit still further the motion of the parts, and completely to prevent the muscles being irritated by the irregular ends of the

bones. If at this period—namely, between the fourth and sixth days—the callus be examined, it will be found intimately intermixing with the surrounding muscles, at the points opposite to the fractured ends of the bone; and, internally, it is also connected with periosteum and coagula filling the cancelli, thus isolating the fractured bone from the surrounding structures. After this, all the appearance of ecchymosis entirely ceases; and the only portion of the original coagulated blood which now remains, is that plugging up the ends of the bone, the fibrin of which appears to have become organized; and therefore it may be said, that the original extravasated blood in part assists in the reparation.

The progressive steps towards union, up to this point, are liable to interruption, either from the want of constitutional power in the animal, or the extent of injury done in producing the fracture; so that some of the experiments required to be repeated. About the sixth day, further consolidation ensues; the surrounding muscles appear distinct from the callus, excepting at the points opposite to the ends of the bone. The diffused matter has now both the appearance, firmness, and elasticity of cartilage; and, by its contraction, which occurs simultaneously with its increased density, tends to bring the hitherto separated fractured ends of the bone parallel, although they overlap each other, through the influence of the muscles. At the points where the bones come in contact, the periosteum is absorbed; but in all the other parts, this membrane is inseparable connected with the surrounding mass, much thickened, and easily detached from the bone, so as to give the appearance of the bone having been deprived of its periosteal covering; but the fact is, that it has only become blended with the effused callus. The portions of bone, where denuded, are softened, granular, and seem to be endued with a higher degree of vascularity, than healthy bone, probably from the absorption of its earthy constituents. Here it is where the first traces of earthy depositions seem to commence; so that it would appear that the surrounding structures so far assist in the reparation of a fractured bone, as to induce approximation, limit motion, and diminish the irritability and contraction of muscle; while the osseous system itself deposits the earthy matter essential to hardness, the grand characteristic bone. This view, however, is to be considered as somewhat speculative, as it requires further experiments to prove its validity; at any rate, it is shown that all the soft parts participate in the injury, and perform a very important office in the completion of a cure: this is rendered more obvious, by the consideration of the inefficiency of the bones of the cranium, neck of the femur, and some other bones, not surrounded by cellular and muscular systems, to work their own reparation. It is nevertheless certain, that so early as the seventh day, in some instances, and the eighth and ninth day in others, earthy matter is secreted in the dense cartilaginous mass in the immediate neighbourhood of the fractured bones. Small specks of the same deposit are observed, at this period, in the fibrin which closes the opening of tho broken extremities, and, at a more advanced time, completely shuts up these canals with a firm septum of bone. If sections of the cartilage be made in the mass surrounding the ends of the bone, and placed on glass and dried, the white earthy matter is rendered clearly visible, deposited in minute specks in this more transparent substance.

NORTH LONDON HOSPITAL.

TALIOCOTIAN OPERATION—DEATH.

A man whose lower lip had been destroyed by ulceration, and who suffered much inconvenience by the escape of saliva, presented himself at this hospital, and Mr. Liston had no hesitation in recommending an operation for his relief, and to which the unfortunate sufferer was induced to submit. The callous edges were removed, a portion of skin was raised from the submental region of such a shape as to fit the excavation, and thus was formed a very respectable looking lip.

Although the operation was executed with that rapidity so desirable, and so highly appreciated at this hospital, the wound was attacked with erysipelas, and the sixth day, notwithstanding the most judicious treatment and repeated consultations on this interesting case, the patient expired.

CASE OF LITHOTRITY—DEATH.

A countryman, about 60 years of age, was admitted into this hospital under the care of Mr. Liston, on Saturday the 28th of June last, and it having been ascertained that there was a stone in the blad-

der, on the Monday following the operation of lithotrity was performed by Mr. Liston. The percursor was introduced in the usual manner, but made a sudden jerk on entering the bladder. Two stones of moderate size were discovered, and broken down, but no portions were extracted. On the fourth day, Friday, the patient expired. The body was examined *privately*, and the diseased parts having been removed by Mr. Liston, to his private abode, the cause of death has not yet been publicly announced to the students of the hospital, which is to be the more regretted, as it has given rise to many surmises on this most interesting and important case.

METROPOLITAN FREE HOSPITAL.

NOTES OF CASES UNDER THE CARE OF DR. RYAN.

Hemiplegia of the left side in an aged subject—Administration of Strychnia—Recovery.

G. R., aged 77 years, was admitted March 20th, 1837, under the care of Dr. Ryan. He is a broken-down constitution, labouring under paralysis of the left side of the body. He states that he frequently bled from the nose previous to his attack of palsy; and he possesses sensation with partial motion in the diseased parts. He was ordered Cathartic pills, and a twelfth of a grain of strychnia in a pill night and morning. Antimonial ointment to the neck. He continued these remedies until June 1st, when he declared himself greatly improved; and he can now walk tolerably well.

Epilepsy relieved by Strychnia.

G. E., aged 48 years, of a bilious temperament, a carver and gilder, was admitted Nov. 21, 1836. He states that he never had a tranquil mind, and was always low-spirited. He is a native of Wales, and cannot account for the cause of his complaint. Hair black, countenance sallow, habit spare. About three months ago he was surprised at finding that he could not cover the holes of a flute, and soon afterwards he was suddenly seized with a fit, which speedily caused his face to turn towards his right shoulder, the ceiling of his apartment seemed to turn round, and then he became insensible. He has never experienced any creeping sensation or aura epileptica. He had a fit every fortnight before he applied at the hospital, and was told by a practitioner that he would most probably go out of his mind.

He was ordered aperient pills, and a twelfth of a grain of strychnia morning and evening.

He continued his medicines until May last, when he considered himself well. He lately had a fit, in consequence of drinking too freely of ale.

July 25, 1837, the general health is now good, and the fits have entirely ceased. Ordered to continued his medicines and live temperately.

The strychnia has failed in other cases.

Ovarian Dropsy—Failure of Hydriodate of Potass and Hydragogues—Rapid Cure by Diaphoretics.

C. P., aged 28 years, the mother of two children, has been in bad health for some months, and subject to menorrhagia. In August, 1836, presented the usual symptoms of ovarian dropsy of the right side. She was ordered the Pulv. Jal. C. with calomel digitalis, and squill, which operated freely, as a hydragogue, but not as a diuretic. She also took the hydriodate of potass in full doses. These medicines were used freely during the winter and spring months, with other diuretics, but ineffectually. In May she was ordered diaphoretics, the acetate of ammonia, with antimony and flannel next the skin, when she began to perspire profusely, and is now (July) free from her disease. She was also ordered tooics during her treatment, as well as full diet.

Warts on the labia externa et interna of an Infant—Purulent discharge.

A. S., aged two years, a scrofulous habit, labours under purulent discharge from the labia, and an immense number of warts on these parts as well as the nymphæ. She was ordered a week solution of the dydriodate of potass, with opium, and also hydr. c. creta cum rheo. m. n., which rapidly effected a cure.

Thymic asthma—Spasmodic croup, or asthma—Laryngismus stridulus—Cure by iodine

A child aged two years, laboured under spasmodic cough and croupal respiration, which at times threatened suffocation. He was attacked daily with spasmodic cough and convulsion, and his face became so livid as to frighten his parents.

The general health was good, and there was no swelling of the throat.

He was ordered two grains of hydriodate of potass, in two ounces of distilled water, a tea-spoonful to be given twice a day, sweetened; and an ointment composed of a scruple of the hydriodate, and an ounce of adeps, to be rubbed over the throat, in the proportion of a scruple night and morning. At the end of a fortnight he was perfectly free from his complaint.

It is worthy of remark that the late Dr. Ley has not mentioned that he ever used the iodated preparations in his numerous cases of this disease.

Syphilitic ulceration of the soft palate, of four years duration.

E. A., aged 24 years, married, of a bilio-nervous temperament, contracted syphilis from her husband four years and a half since, for which she was treated by an educated surgeon. For the last four years she has suffered severely from an ulcer in the throat, for which she was ordered mercury and fumigations, in Bartholomew's hospital. She is now, June, 1837, in very bad heatlh, and considers her disease incurable. Her throat has been affected during the last four years.

Her general health was attended to, and she was ordered a gargle of the iodate of mercury, to be used three or four times a day. She is now, July 15, nearly well.

Poisoning of an infant with Colchicum exhibited to the mother—Recovery—Observations.

An infant aged six months, was seized with violent vomiting and diarrhœa, followed by coma, in consequence of its mother having taken eight doses of colchicum, for rheumatism, uncombined with an aperient. Mr. Churchill, of Strutton-ground, Westminster, requested Dr. Ryan to see this case. The colchicum had acted on the breat-milk. Treatment—Aromatic spirit of ammonia, brandy and arrow-root, warm bath, which effected recovery.

Observations—This case proves the obstetric aphorism, that medicine taken by a wet-nurse, affects the breast-milk, and through it the infant. It also shews the necessity of combining aperients with colchicum, so as not to allow it to accumulate in the system. In this case the elder patient had no alvine dejection for three days, and the medicine had accumulated in the system.

TO CORRESPONDENTS.

Crito.—The three surgical pures in an early number. The portraits which the quarterly wag has depicted, are not only amusing but highly instructive.

Nemo.—Pressure of business has prevented it, but his want will be supplied, perhaps, next week.

Inquirer.—The rent of the beautiful residence at Charing cross may be heard of by a personal application, or by letter, post paid, to Mr. George Robins.

Westminster.—No change has yet been agreed upon by the shareholders of the Westminster Medical College. The *hospital* fee will certainly be diminished, and will not exceed that of the Middlesex.

Chirurgus.—We know of no particular advantage in removing a portion of the prostate gland, though it be enlarged, in the operation of lithotomy.

Medicus.—The Metropolitan University will not be in operation for several months. Its regulations are not published.

Erasmus.—The naufragium is too ominous.

Censor.—The negotiations between King's College and the Charing Cross staff are at an end. No junction—*divide et impera* is the motto. The Birmingham statesman encounters an older politician.

J. S.—The Physicians' Vademecum is just published.

Boheraave.—Professor Davis did attend her Koyal Highness the Duchess of Kent at the birth of her most gracious Majesty.

Heraclitus.—Our laughing friend is too severe on the batch of the faculty at the levee. It was all pure loyalty and dutiful affection towards our beloved and most gracious Sovereign. Two and twenty Esculapians were,certainly, a most formidable array at one interview, without all the inadmissibles, who were hooked on the deputations.

An Irish Reformer.—An improved Medical Charities Bill will pass next Session, and the just rights of all British subjects will be properly protected. The Dublin College of Physicians like its benighted prototype in Pall Mall East, will, of course, allow the Surgeons to obtain all the loaves and fishes.

All communications and works for review to be forwarded, (carriage paid) to Dr. Ryan, 4, Charlotte-street, Bloomsbury-square.

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NOTES OF LECTURES ON PHYSIOLOGY.

By Dr. Fletcher.

Delivered in the Argyle Square School of Medicine, Edinburgh.

No. XXXIV.

THERAPEUTICS.

Sedative, antispasmodic, and narcotic medicines—Similar in their actions to astringents—Difference between sedatives, antispasmodics, and narcotics—Prussic acid—Mercurial erythism—Animal, vegetable, and mineral antispasmodics—Antacid and anthelmintic medicines—Antacids in scrofula—Antalkalies in scurvy—Mechanical, chemical, purgative, and specific anthelmintics—Action of lime-water on worms—Cowhage and filings of tin—Form of medicines—Lozenges—Pills—Proper weight of both—Three-grain pills—The bread-pills of the pharmacopœia—Conserves—Proportion of sugar they contain—Confections—Infusions—Decoctions—Maceration and boiling—Respective advantages and disadvantages of each—Emulsions—Mixtures—Powders suspended by mucilage—Different kinds of mucilage—Gum-arabic, gum-tragacanth and starch—Inspissated juices—Extracts—Different modes of preparing them—Proper mode of preparing a water-bath—Barry's mode of evaporating extracts in vacuo—Tinctures—Spirits—Distillation—Plasters—Ointments—Cerates—Use of oil, lard, and wax—Combination of medicine—Their virtues increased by it—Simplicity in prescribing carried too far—Huxham's prescriptions—Formulæ with four hundred ingredients—Alexandrian pharmacopœia—The British pharmacopœias—Surgery—Moxa—Introduction into Europe, France, and England by Bucholz, Putet, and Wallace—Difference between its action and that of the cautery—Sometimes combined with acupuncture, by means of a white-hot needle—Electricity—Diseases for which it is employed—Sparks and shocks—Galvanism—Difference between it and electricity—Diseases in which it is resorted to—Galvanism in asthma—Wilson Philip on galvanizing in apoplexy—His mode of galvanizing the chest—Acupuncture—No bad effects from piercing blood-vessels—The needle passed into the heart and brain—Diseases for which acupuncture is recommended—Different theories of its efficacy—True solution by Dupuytren—Practice of the Japanese—Acupuncture with ivory needles—Blood-letting—Venesection, arteriotomy, cupping, scarifying, and leeching—Advantages of studying physiology—Its agreement with revelation.

4. *Sedatives, Antispasmodic, and Narcotic Medicines.*—The mode of action of these medicines is probably not essentially different from that of the second class—astringents. There are peculiarities in each of the three orders into which we have divided this class; and they are administered with different objects. Sedatives, for instance, act chiefly on the heart; antispasmodics on the muscles; and narcotics and sensation and thought. The chief of the sedatives are, digitalis, prussic acid, and tartar emetic. Mercurial erythism belongs to this division. Of the second order, the principal vegetable substances are, valerian (valeriana sylvestris), saffron, and the fetid gums, assafœtida, galbanum, opoponax, ammoniacum, and sagapenum. The animal antispasmodics are musk and castor. The other antispasmodics are petroleum, oil of amber, burnt feathers, and the oil of turpentine and cajeput. The officinal narcotics are opium, poppy-heads (papaver somniferum), petals of the red-poppy (papaver rhœas), monk's-hood or wolf's-bane (aconitum napellus), hellebore, stavesacre (delphinium staphisagra), cocculus indicus (menispermum coccu-

lus), poison-oak (rhus toxicodendron), bitter almonds (amygdalus communis), peach leaves, cherry-laurel leaves (prunus laurocerasus), hemlock (conium maculatum), the lettuces (lactuca virosa and sativa), nux vomica (strychnos nux vomica), deadly nightshade (atropa belladonna), thorn-apple (datura stramonium), henbane (hyoscyamus niger), tobacco, great mullein (verbascum thapsus), hedge-hyssop, camphor, and meadow-saffron (colchicum autumnale).

5. *Antacid and Anthelmintic Medicines.*—Antacids are given in scrofula, while antalkalies are given in scurvy. The chief antacids are the alkalies potash, soda, and ammonia; and the earths lime and magnesia, with the carbonates of them all. The antalkalies are the sulphuric, nitric, muriatic, acetic, citric, and tartaric acids; the orange, the lemon, sorrel (oxalis acetosella and rumex acetosa), tamarinds (tamarinds Indica), plums or prunes, the hips of the wild-briar (rosa canina), the mulberry (morus niger), the lettuce, and all fresh vegetables. The action of the anthelmintics is in general either simply chemical or mechanical. They are divided into four orders:—1. Mechanica. 2. Chemica. 3. Purgatives. 4. Propria. Lime-water is the only chemical anthelmintic. It dissolves the mucus in which the worms have their habitat. Cowhage, or cow-itch (dolichos pruriens), and filings of tin, belong to the mechanical anthelmintics. The last order—that of proper anthelmintics—comprehend those substances which poison the worms; such as bitters, polypodium, filix mas, and gin.

With respect to the form of medicines we may observe, that a trochiscus, or lozenge, weighs about ten grains, and a pill about five. The pill of the ammoniuret of copper weighs but three grains, and is the only one ordered by the pharmacopœia to be prepared with crumb of bread. A conserve is any medicine mixed with sugar. Conserve of red roses contains about one-fourth petals, and three-fourths sugar. A confection is more complicated, the consistence of the medicinal substance being diminished by means of dried fruits, figs, tamarinds, &c. An infusion is made by maceration, and a decoction by boiling. The former is better, for boiling is likely to destroy the aroma, and the extractive principle is often changed by the heat, becoming oxidized, insoluble, and consequently inert. Hence the infusion of bark, or of senna, is better than a decoction; but the latter has the advantage of saving time. An emulsion is oil suspended in albumen, or an alkaline solution. A powder may be suspended in a mixture, by means of mucilage. Mucilage of gum-arabic is made with one-third part gum; mucilage of gum tragacanth is made with one-tenth part gum, which is not dissolved but suspended; mucilage of starch is made with only one-sixteenth part of starch, for the latter swells up and the solution becomes very thick. Mucilage of gum-arabic is used for drinking, the other two mucilages for suspending powders. An inspissated juice, is got by pressing out the juice from the recent plant, and then evaporating it to the proper consistence. An extract is obtained by boiling the medicinal substance with eight parts of water, and then evaporating the decoction in various ways. If a water-bath be used for this purpose, the water should be saturated with salt, in order that it may bear a high temperature. Barry has a method of evaporating in vacuo. A tincture is prepared by maceration; a spirit by distillation. Plasters are generally made by litharge and oil. Ointments are substances rubbed up with lard; if wax be added, by melting the whole together, it is a cerate. Muriate of lime, and of baryta, are always kept in solution, from their tendency to deliquesce.

The virtues of medicines are increased by combination; and we have probably simplified too far in prescribing. Huxham had four hundred ingredients in some of his formulæ. This was going to the other extreme, for it must have been impossible to tell *à priori* what the effect of such medicines would be. In the pharmacopœia of Nicolais, of Alexandria, there were two thousand six hundred and sixty-eight preparations, each containing, on an average, twelve ingredients. In our three pharmacopœias there are only thirty, and most of them contain only three ingredients.

III. *Surgery.*—This department of therapeutics comprehends the various operations which are performed on the different organs of the body. We shall notice a few.

1. *Moxa.*—This operation was introduced into Europe by Bucholz; into France by Putet; and into England by Wallace. It acts more slowly than the cautery; does not constrict the vessels so much, and allows them to expel their blood. Acupuncture is sometimes combined with the application of the moxa. The needle is hid in the roll of cotton, and, when while hot, is pushed forward

into the flesh. It is a very ferocious remedy, but is said to be very efficacious.

2. *Electricity*.—It is of little importance whether we draw sparks from the patient, or give them to him; for it is the change of electrical condition that cures the disease. It is resorted to in amenorrhœa, chlorosis, paralysis, diseases of the joints, rheumatism, &c.

3. *Acupuncture*.—The stimulus of galvanism is stronger than that of electricity. It is used in the same diseases, and in dyspepsia, asthma, paralysis of the œsophagus, &c. If asthma were produced by spasm, galvanism would aggravate instead of relieving it. Wilson Philip recommends that, in apoplexy, galvanic shocks should be passed through the chest; thus keeping the organic system going till the remedies adopted have time to restore the stimulus of the brain; for if this were not done the patient would die in the mean time. In galvanizing the chest, Wilson Philip applies one plate to the nape of the neck, and the other to the epigastrium, so that the galvanic current may pass in the direction of the spine, the phrenic nerve, and the par vagum.

4. *Acupuncture*.—No bad effects result from driving the needle through vessels; for the parts close after it is withdrawn. It has even been passed into the heart and brain. It is used in rheumatism, palsy, gout, deep-seated inflammations, and all functional diseases. It probably acts, as Dupuytren suggests, by applying an immediate stimulus. The Japanese have long employed it, with the object of drawing off the peccant airs, to which they think all diseases are referrible. They practice on images with needles, in order to hit on the three hundred and fifty parts, into which they believe the needle may be driven with impunity. Cloquet and others maintain that the needles are beneficial from drawing off nervous energy; but inflammation being diminished action, would indicate a deficiency instead of a redundancy of this nervous energy. Others attribute the good effects of acupuncture to galvanism; and the needles do exhibit galvanic phenomena; but they do the same when plunged into healthy parts, as when the parts are diseased; and needles of ivory will do as well for acupuncture as those of steel. Duncan says they do not act by imparting a stimulus, for very little sensation is excited; but there may be irritation without sensation. Some say acupunctue acts through the medium of the passions; as animal magnetism probably does.

5. *Bloodletting*.—This may be accomplished in five different ways. 1. Venesection. 2. Arteriotomy. 3. Cupping. 4. Scarifying. 5. Leeching. Leeches are objected to in erysepelas, paralysis, and dropsy, from the fear of producing gangrene. Blisters are objected to in the same cases, for the same reason. Leeches should be avoided in parts to which pressure cannot be applied, or which are destitute of fat, as the subsequent hæmorrhage may be troublesome. Monro recommends the twisted suture to suture to stop leech-bites. Arteriotomy is not general bleeding; for it takes away blood going to the part affected. In venesection, it does not matter whether the vein opened be near the part affected or not, provided it be of equal size; although if it be taken near the part, it may perhaps diminish congestion, by removing the resisting column of blood.

The objections which have been urged to the study of physiology are unfair and untenable, while, on the other hand, the inducements to engage in it are great and numerous. Is it not, in the first place, a tribute that we owe to the great Author of Nature, who has made all his works so admirable, and has endowed us with faculties for admiring them,—is it not a tribute that we owe him to admire these works, and thus to rise "through nature up to nature's God." Were our faculties given to us in vain, or rather that we should employ them in praise of his power, wisdom, and goodness? And how can we praise what we do not appreciate? We may use like parrots, the words of praise, just as a man ignorant of painting or sculpture may repeat what he has heard others say in praise of the author of a picture or a statue; but we cannot be actuated by the soul which should inspire these words, unless we know and feel how infinite are the merits of those works; for this knowledge and feeling alone can true admiration be founded. The blindest savage may be instructed to mumble lip-service to the Creator of the universe; but it is the man of intelligence alone, whose mouth can speak his praises from the fulness of heart. We may say, "How manifold are thy works, O Lord"! but it is almost scornful to say so, if we have taken no pains to know these works. We may add, "In wisdom hast thou made them all!" but the addition is mere mockery, if we have neglected to search for the evidences of that wisdom A

wilfully ignorant man may be superstitious, but he can hardly be religious. He may fancy that he reverences his Creator, but he cannot reverence him as a thinking and a rational being, and as one liable to give an account of the talents entrusted to his keeping if he be content, at the same time, to remain indifferent to his works. And which of his works is so well adapted to inspire admiration of their Omnipotent Author, as the structure and actions of animals in general and of man in particular? It is on the evidences which physiology affords, of the wisdom, the power, and the goodness of God, that the Greatest men of every age have principally relied for inculcating a belief in the existence and attributes of a Deity; and can we, without reproach, neglect to avail ourselves of this assistance to the faith inspired by Holy Writ, of this means of illustrating and corroborating the sublime truths of Scripture?

Most unwilling should I be to lend myself, in the remotest manner, to any attempt to make what is called natural religion a substitute for revealed religion. Natural theology may tend to make a man more so; but natural theology can never make a religious man an irreligious one; for it can never teach him the immortality of the soul, and his moral responsibility. To attempt, therefore, to make the writings of any class of philosophers a substitute for the Bible is an attempt to annihilate all the noblest and best aspirations of man. But I am totally ignorant of the existence, in any class of persons, of a desire to effect this substitution; and I cannot help thinking that some well-meaning people have lately displayed rather more jealousy than is calculated to benefit their cause, of any interference by lay teachers with the business of religion. The same God who gave us the Bible as the mandate of his will, gave us likewise the objects of nature as the testimonials of his wisdom, power, and goodness; and I am at a loss to perceive by what train of fair reasoning, any who insists on the latter as bearing evidence of the highest attributes of the Creator, can be construed into an opposer of the former, as inculcating the same sublime truths of revelation. Why should facts which might be rendered mutually illustrative of each other, and be made to act allies, strengthening and receiving strength, be adduced only in opposition, or supposed to be so adduced? Can it be believed that the writings of a Boyle, or a Swammerdam, of Roget, of Kirby, or of Bell,—men whose attainments in science make us proud of the species to which we belong,—can it be believed that their writings have tended, in the slightest degree, to shak the religious faith of a single individual? Has not the fervour of the piety which they everywhere breathe, tended rather to rouse thousands from their withering and fatal apathy? The pestilential precepts of infidelity have emanated, not indeed exclusively, but principally from benighted visionaries, blind to the beautiful harmony of nature; and from fools (base, illiterate, and cowardly) who have dared to "rush in where angels fear to tread"!

DR. FLETCHER'S POPULAR LECTURES.

During the early part of last year, (says "Chambers's Journal") popular lectures on the physiological structure of the human body, were delivered to miscellaneous audiences in Edinburgh, by the late Dr. Fletcher, one of the most eminent physiologists of the Scottish metropolis. As these lectures were proposed to be delivered both to ladies and gentlemen, it was believed by many, those who allow that nothing new can be done, that they would not be successful. But the reverse of this was the case, and the public are left to lament that the unexpected death of the lecturer has prevented the renewal of these most agreeable and instructive exhibitions. We attended several of the lectures, and were much delighted with the ingenious views of the accomplished speaker. He illustrated his discourses with coloured drawings and wax models, and in such a manner that the most fastidious of his hearers could take no offence. The following observations on this point are from his introductory lecture, which has since been published.

"With respect to the indelicate and repulsive nature of physiological studies, the time is fortunately past, although not *long* past, when it was necessary to refute the calumnious charge. In teaching this science as a branch of medical education, I have never witheld from my hearers any fact with which it was incumbent on them, as medical men, to be acquainted, nor refrained from any illustration which I considered calculated either to arrest the attention, or to make an impression on the memory. But I shall never forget that, while in this place, I am not in a theatre of medicine, nor am I addressing those whose business it is to know *everything* relating to the physiological depart- of that profession. The privilege of selec-

tion is here allowed me, and I must very much fail in my object if I shall have occasion to see a single cheek for a moment suffused, or a single eye cast down or averted from anything that I shall utter or exhibit within these walls. There is no manner of necessity for using one word that can injure, in the slightest degree, "the fine enamel" of the purest mind, or for displaying one object which the most sensitive may not contemplate without offence; and heaven forbid that I should wantonly *seek* occasion for doing either! I can also make every allowance even for the natural weaknesses of the uninitiated, and as many such persons would perhaps shudder at the exhibition of any actual part taken from the human frame, I shall scrupulously abstain from introducing such parts. The organs of the lower animals, assisted occasionally by casts or delineations of the corresponding parts in man, will for the most part be quite sufficient for explaining any function of the human economy. The goddess of purity, and the god of prejudice (if there happen to be such personages), may look every day, with equal boldness, on my walls and tables."

We remember one lecture in particular, the subject of which was the construction of the lungs, the larynx, and the organs of voice. Dr Fletcher's observations on this subject tended to show that much injury is done to health by keeping silent; and he caused a laugh among the audience when he mentioned that one main reason why women generally live longer than men, is that they *speak* more. In other words, they exercise to a greater degree one of the mos important functions in the system. This, he said, was the physical cause, although there were others of a moral nature. He therefore argued that speaking, and more especially singing, when indulged to a moderate extent, were of great benefit to health.

The American physician, Dr. Rush, coincides in opinion with Dr. Fletcher, as to the utility of singing, not only as an accomplishment, but as corrective of a tendency to pulmonic complaints. "Vocal music," he says, "should never be neglected in the education of a young lady. The exercise of the organs of the chest by singing, contributes much to defend them from those diseases to which the climate and other causes expose them. The Germans are seldom afflicted with consumption, nor have I ever known but one instance of spitting of blood among them. This, I believe, is in part occasioned by the strength which their lungs acquire by exercising them in vocal music, for this constitutes an essential branch of their education. The music master of our academy has furnished me with an observation, which is still more in favour of this opinion. He informs me that he has known several instances of persons who were strongly disposed to consumption who were restored to health by the exercise of their lungs in singing.

LECTURES ON SURGERY.

By John Hunter, F.R.S.

Delirium—Dreams.

A simple sensation in the mind of a local disease in the body which does not correspond with the seat of the disease itself has, I believe, been always referred to the principle of sympathy. Thus, sensation of pain in the shoulder from disease in the liver has been always supposed to arise from the shoulder sympathizing with the liver. The sensation of the glans penis from a disease or irritation in the bladder has been referred to the same cause. But I believe it is a delusion in the mind; for the nerves of the part are not the seat of the disease, and irritation could not communicate to the mind the sensation of pain in the part affected excepting they (the nerves) take on the same action, which they must do when they produce the sensation of pain of that part. But if the nerves of the part which is the seat of sensation in such cases do not act at all, it cannot be called sympathy.

That there is such a delusive principle in the animal œconomy we see every day, and that it not only exists between mind and body, so as to lead us astray from the real subject, but between the mind and other bodies with which it has no immediate connexion, not even by the common senses. But we must allow that certain sensations can form a peculiar state of mind, called a sympathizing mind, for we capable of transferring the sensation of another person to ourselves, which is like a dream. A delusion in the mind is an object appearing to be where it is not.

Delirium.—It will be very difficult to prove whether delirium is a disease of the brain or nerves; it appears equally easy to prove that is from one as from the other.

A delirium is a dream arising from disease, whether the dream is in the brain itself or in the body; only it is worthy of

consideration, as dreams arise from sleep, and as a delirium is a diseased dream arising from what may be called diseased sleep, whether it may not be first necessary to give a short definition of sleep

Perfect sleep is a cessation of susceptibility of sensation, and of course of all its actions; the consequence of which is a cessation of consciousness in the animal of its own existence; and also, of course, of the consciousness of the relation it bears to itself and every other thing. But whether this cessation of the susceptibility of impression arises from the brain not then having power to receive impressions of the actions of nerves, or whether the nerves are not then capable of acting or conveying their action to the brain in the state of sleep, is not so easily determined.

Dreams are actions of the mind in sleep; therefore may be independent of any immediate information or impression, but are always independent of the relative connexion between body and mind, or consciousness of the existence of that relationship between the two. For the connexion between the two enables the mind to distinguish perfectly what is sensation and what is only thought, without which all would be a dream. In a delirium, as in sleep, we find the susceptibility of external impression lessened. Whilst sensation is continued sleep is kept off; delirium may be also lessened by arousing the mind from that particular state by external impressions; so far delirium appears similar to dreams, but it widely differs in other respects. In natural sleep the more the brain puts on that peculiar state the less we have of dreaming; but the more the other state is put on the greater the delirium. Dreams often do *arise* from sensations of the body being conveyed to the brain, it being in an imperfect sleep; but the consciousness of the connexion between our own body and our mind being conveyed to the brain, it being in an imperfect sleep; but the consciousness of the connexion between our own body and our own mind being cut off by the state of sleep, the sensation may or may not be referred to our own body: it may be referred to some other body. In some cases it is not referred to the part of the body where the impression is made; and the same thing happens in delirium, where the connexion is cut off; these not distinguishing between real sensation and thought, what the mind thinks about appears to be real.

But even where the mind is in full possession of the consciousness of its connexion and relationship with the body, we have in some cases this delusion, as the appearance of the turning round of the objects about us whilst they are really fixed, and that in consequence of our having turned about quickly; giddiness from going to a height, or from riding backwards in a coach. Delusion is also an effect of intoxication and disease. Whilst awake and in health, impressions produce sensations, which are conveyed to the brain, and from these the mind reasons: but suppose the mind to have lost, or as it were forgot, its former connexion with our body, then the above false reference takes place.

A gentleman came into this country in 17—; his memory was imperfect, and a particular kind of delirium began whenever he was going to sleep, but afterwards continued whilst wide awake; and for a week before his death he was not quiet from this delirium a moment, but whilst his impressions were forced on by external objects. His delirium was of this kind: he was constantly talking of former circumstances of his life, but referring them to the present moment and to some other person. There was a revival of past ideas in his mind, but from a want of connexion between his mind and his body, he was not enabled, by his present impressions, to infer how little relationship they bore to the present time, or to those persons to whom he referred them: at the same time, it really appeared more a want of connexion between the mind and the body than the mind itself being hurt, for he determined rightly what should be done in those circumstances which he supposed present, and would express his sentiments in really elegant language. That it depended more on want of connexion than on disease of the body, appeared, from his being sensible of impressions, and referring them to the part where they took place, but supposing that to be in any other body than his own. Thus, he would tell his nurse or the bystanders that they were hungry or thirsty; but upon offering food or drink, it appeared plainly by his eagerness that the idea had arisen from a sensation of hunger in his own stomach. He would show great signs of distress or anxiety, which he would say was because his nurse wanted to go to the close stool, but was restrained by his presence; and this from his sensations also. He had a violent cough, in which he would sympathize with some bystander, proceeding in his

story after the cough, no otherwise disturbed than by sympathizing with the person whom he thought so unfortunate as to have it. The objects about him were more to him than his own sensations.

A gentleman who was fond of his bottle referred all his own weaknesses and feelings, as he became intoxicated, to those around him; and upon his going home would insist upon undressing all his family and putting them to bed, declaring that they were too drunk to do it themselves; and this happened not only once, but whenever he was intoxicated. I myself once experienced what I have since thought must have proceeded from this want of connexion between the mind and the body. I was reading a remarkable case, and reasoning with myself upon it, when I found the letters and words made an impression on the retina, but that I was incapable of affixing a meaning to them: this I thought might proceed from want of sleep; but that was not the case: I tried repeatedly, but without effect, and at last I went to bed, from which I did not move for three weeks, a violent affection of the head following this extraordinary circumstance. It may not be amiss to say, that the case I was reading was that of the late Mr. Foote, who was not able to command his attention to more than one action or circumstance at a time: thus, if he took his snuff-box out of his pocket and held it in his hand, it was all very well, until he attempted another action, such as taking a pinch of snuff out of it, and then the box fell immediately out of his hand; in fact, he was going back into a state of second childhood, for a child is not capable of commanding his attention to more than one circumstance or action at a time; give him a stick to hold, and call his attention to another object, and the stick will be dropped; for it is by habit we become capable of attending to several actions at a time. If a person is blindfolded and put into a coach, he will think he is riding forwards though really moving backwards. An impression from any part, either healthy or diseased, may be conveyed, yet there may be no consciousness of the mind from which part of the body it was conveyed, the mind having full possession of the impression, and a perfect idea of it, but having nothing to direct it right in its reference of it. It must refer it somewhere, and is more likely to refer it to another than to itself.

A gentleman, a medical man, dreamed he had given a patient too strong an injection for gonorrhœa, and that it had produced a total stoppage of urine: he awoke, and found an erection of the penis, and that he could not void a drop of urine. Here was an impression without the consciousness, and he referred the impression to another person.

A gentleman, upwards of ninety years old, suddenly lost his senses, and in consequence of this there was a reference of all the ails which he might be supposed to feel to his wife, who had been dead some time, but who he now thought to be alive, and ordering the utmost silence to be preserved, lest by noise her illness should be increased. The new-born child has probably sensation without this consciousness. The contrary takes place when a person refers the sensations of others to himself, or when the idea of sensation is supposed to be sensation itself, as happens in those who are affected by animal magnetism. I was asked to go to be magnetized, but at first refused, because the spasm on my vital parts was very likely to be brought on by a state of mind anxious about any event. Thus, at my country box I have bees, which I am very found of, and I once was anxious about their swarming lest it should not happen before I set off for town; this brought it on. The cats tease me very much by destroying my tame pheasants, partridges, &c., and rooting up my plants. I saw a large cat sitting at the root of a tree, and was going into the house for a gun, when I became anxious lest she should get away before my return; this likewise brought on the spasm; other states, where my mind is much more affected, will not bring it on. Now I feared lest my anxiety for the event should bring on the spasm, and that should be imputed to animal magnetism. But considering that if any person was affected by it it must be by the imagination being worked up by attention to the part expected to be affected, and thinking I could counteract this, I went; and accordingly, when I went, I was convinced by the apparatus that everything was calculated to affect the imagination. When the magnetizer began his operations, and informed me that I should feel it first at the roots of my nails of that hand nearest the apparatus, I fixed my attention on my great toe, where I was wishing to have a fit of the gout; and I am confident that I can fix my attention to any part until I have a sensation in that part. Whenever I found myself attending to his tricks, I

fell to work with my great toe, working it about, &c., by which means I prevented it having any effect on me.

OF LOCAL AND CONSTITUTIONAL DISEASES.

It may be difficult in all cases of local diseases to distinguish between one truly local and one arising from the constitution; that is, one arising entirely in the part diseased, and one arising entirely from the constitution. For as one can and often does affect the other, which may be called mixed, it becomes the more uncertain where the disease originated.

Diseases may be called constitutional, local, and mixed. Diseases may be originally constitutional and originally local; that is, diseases may take place in the same person from constitutional or local causes, and be totally independent of each other; but they may affect one another.

The first, or constitutional, is either a universal action of some kind, as fever, or where there is a universal susceptibility for an action, but the action is local. Therefore they are divisible into two kinds, 1st. universally constitutional, and 2d. constitutionally local.

Universally constitutional is when there is universal action of some kind, as fever, where every part of the body is under some diseased action, which will be according to the nature of the influence which produced the fever, as inflammatory fever, putrid fever, &c.

Those arising from external influence will in some degree reduce all constitutions to some one mode of action; and whatever difference there is between one and the other must only arise from a peculiarity in constitution.

If an inflammation is produced in any part by violence, it will always be as the constitution is. If a man has a fever, a cut will partake of the disease, and the inflammation will be erysipelatous, or so on, according to the fever. But if the fever is of specific kind, superadded to the nature of the constitution, as small-pox fever, a cut will not partake of the specific quality of that fever, but will be exclusive of the specific quality. Nor will a cut on any part of a pocky patient be venereal.

Constitutional diseases are of various classes, which are known by their effects. A constitutional disease is a universal diseased action, as fever, every part taking on more or less of the diseased disposition. Such diseases, I apprehend, have no disposition for local action, though it is commonly supposed they have, as where fever produces abscess. This I hardly believe, though an abscess may form in the time of that fever, and is caused by it, or is an effect of that fever; but it is not an act of the constitution, according to our third division, therefore does not relieve the constitution of that fever. What I shall call an act of the constitution relieves the constitution, as gout falling on a part; but in abscess from fever it is only that this part has been so disturbed in the time of the fever that it has gone into inflammation and suppuration.

The second of the universal is the constitutionally local, that is, when there is universal susceptibility of body to produce peculiar local complaints, but not the action, till disturbed: requiring an immediate cause, which may at the time be either universally disturbing, as fever, or in the part only, as an accident. Thus the whole constitution may be affected with a gouty disposition, but the disease becomes local and is cured. We see constitutional or universal diseased affection excite local, as fever exciting scrofula, not as a termination of that fever, but because the part affected was partaker of the universal affection, and being disturbed by that universal affection or action, it took on the mode of action it was most susceptible of. It would do the same thing on being locally disturbed; therefore, as to its diseased action, it is the same whether it is disturbed as part of a whole, or only by itself. The scrofula goes no further than a susceptibility for diseased action, until it is brought into action by the local injury or constitutional fever.

Perhaps there is no term so vague or undetermined in the mind as the term constitutional. Universal action of every kind may be called constitutional, even when arising from some local cause, which I have called one of the mixed; or one capable of producing local effects, which we have also called one of the mixed. But a true constitutional disease is one arising, as it were, spontaneously in the constitution, partaking of the nature of the constitution itself.

Local disease I would consider in two lights: 1st. When it is a natural local action, being a kind of violence on a part, there being no constitutional local affection. In this case the disease takes on no specific quality of the constitution, either from the constitution having none, or the disease not being affected by it, being such as either arises from itself in a

part from a local cause, and may take place in any constitution, or may be produced by accident or violence where the constitution was never affected. 2nd. Which will more properly come under the head of mixed, where the local affection either affects or is affected by the constitution.

The mixed may be said to partake of the first and second, and is often the consequence of either, namely, original constitutional producing local, or original local producing constitutional: therefore they are often of two kinds, and such as may be called secondary actions either of the constitution or part, as universal sympathy with local disease, yet not what generally comes under the idea of common sympathy, as sympathy of part with part. Of the mixed, the first kind is where original constitution produces local; the second where it influences local already produced. Therefore this kind is divisible into two species.

It may be difficult to say certainly when a constitutional disease really produces local; but it may be set down generally that there will be a distance as to the time of appearance of the two diseases. The first of these two species is of various kinds, perhaps belongs more to specific diseases than to common, and is where the constitution from its nature produces a local one, and is necessarily relieved by it, by what I have called an act of the constitution. Of this kind are smallpox, measles, fevers producing critical abscesses, erysipelatous fevers, gout, &c., and on this is founded the doctrine of revulsion.

Local diseases produced by an act of the constitution may be illustrated, I think, by the growth of plants. A plant or tree appears to have a disposition and power of producing either only a top shoot, or a number of shoots, called branches, which are according to the nature of the plant. If the top is cut off, then a new branch sprouts, and it serves as a top; so that the disposition is taken up by some other part most susceptible of action. The same thing happens in those plants which grow by branches. So that the removal of a part in action gives the disposition of action to parts not before dispose to act, but next in order of susceptibility.

The second of the mixed is where original local produces constitutional, and which may alter the constitutional disease already existing, or cure it. This may be of three kinds.

1st. The immediate; 2nd. Less determined as to time; 3d. The remote. Of the first there appear to be two; of the second but one, though it may appear in different forms; of the third probably only one.

Of the immediate we shall reckon that which is called symptomatic fever. Delirium I shall reckon the second, though it is not always the second as to time. The third, or remote, is hectic, to which may be added symptoms of dissolution, which last stage may be the consequence of either of them, or of any other disease.

The first of these is generally called symptomatic fever, but I choose rather to call it sympathetic inflammatory fever. It is sympathy of the constitution with the first stages of local diseases, which is the action of alarm on the constitution, rousing up its powers to produce action.

The second, or delirium, appears to arise from an affection of the brain or sensorium, producing sympathy of action of the brain with the nerves of the part; not sensation, as headache, but an action producing ideas without uniting sensation, which is therefore delusive.

The remote, namely, the hectic, is a sympathy of the constitution with local disease, but sympathy of another kind; it is sympathy with the operation of an incurable disease, where the constitution is conscious of inability of the part to perform a cure, by which means the constitution is at last, as it were, worn out, producing dissolution if not removed.

Dissolution is the last stage and consequence of all, whether local or constitutional.

Diseases are common or specific.—All diseases are either common or specific, but it is more than probable that most diseases have some specific qualities. A common disease is such as will attack every constitution, and perhaps every animal, and rather appears to be an increased action, as common inflammation, common inflammatory fever, &c.

Many diseases may be reckoned specific in their mode of action, though not in their cause. An ague is a specific action, but its causes are various. Gout is as specific action, but its causes various. Cancer is a specific action, though its immediate causes are various; but it is capable itself of becoming a true specific cause, by forming a poison. The cause of scrofula varies, though its action is specific. The remote cause of all is a greater susceptibility of such actions.

A specific is a peculiar mode of action, differing from every other mode of action. A true specific disease is one that probably cannot arise but from one cause, and which probably belongs only to morbid poisons; for although gout, scrofula, ague, &c. may be ranked among the specific, yet they can and do arise from a thousand causes.

There seems a specific susceptibility for those diseases in those that have them. But in poisons there must be a specific cause, which may be attended at the same time with specific susceptibility of such, as some have a greater tendency to small pox than others.

Specific diseases are such as we cannot increase, for they always act with the full force of the readiness in which the constitution is at the time. If the constitution can be made more susceptible of action, the action will be increased.

Every specific disease has two modes of action—namely, the common and the specific,—joined to it. There are specific inflammations, specific suppurations; or, in other words, there are inflammations and suppurations with specific properties, or which have specific properties superadded; thus, in smallpox there is common inflammation, with the specific qualities superadded. Specific diseases may be either universal or local; universal, as fevers of particular kinds; local, as scrofula; others are mixed, as agues. rheumatism; and these admit of a cure from a variety of medicines.

A circumstance worthy of notice takes place with respect to local specific diseases: parts appear susceptible of them as to take on their action so readily, that were it not for another very curious circumstance we might soon expect them to spread over the whole body; but the favourable circumstance I refer to is where the disease is spreading very fast, affecting parts which the disease has not yet touched, whilst in the centre this diseased action no longer takes place. Those parts which have already suffered this action appear to have lost their susceptibility of it, whilst the surrounding parts are contaminated by sympathy with those parts already affected: this property belongs to many, as erysipelas, herpes, &c. I have seen the same thing take place in ulcerated bubo, spreading over the whole belly and thigh, but healing in the centre. Another circumstance is to be added to what I have mentioned as hindering the disease from extending over the whole body, which is, that the constitution itself alters or loses that peculiar susceptibility before such an event takes place.

Different parts differ very much in their power of resisting diseases, as well as in the power of curing themselves, or getting rid of the diseased action and putting on a curative one: this seems to be according to the strength of the circulation in the part; where this is less the power is less; thus, there is greater power of resistance in a muscle than in a tendon. But in specific diseases I should suppose there is little difference in this respect, in consequence of a difference in structure, although we know that specific diseases affect some parts more than others, as the smallpox affects the skin; the measles, the skin and surface of the lungs; hooping-cough and hydrophobia, the throat; &c.

LECTURES ON OBSTETRICY,

AND

DISEASES OF WOMEN AND CHILDREN.

DELIVERED BY DR. RYAN.

Generation—Ovology.

The same orgasm that affects the ovary and tube is said to render the womb vascular, and slightly congested (Harvey, Ruysch, Hunter, and others). Its internal surface, thus irritated, secretes the albuminous concretion, called decidua, by Hunter, and epichorion by Chaussier. These effects are purely sympathetic, because they exist in extra-uterine pregnancies; they are more perfect, however, when produced by the presence of the ovule.

The volume, form, and direction of the uterus are changed; its parietes are enormously thickened; its weight, at the completion of the term of gestation, is two or three pounds, and compared with that of a woman who has not been a mother (two ounces), and with that of a virgin half an ounce), we find it multiplied by nearly twelve and twenty-four. Its fibres are muscular (Lobstein); but not invariably so, as attested by Dr. Malins and myself, in a case we published (London Medical and Surgical Journal, January, 1831, vol. vi.)

The opening through which it escapes becomes cicatrized, and is called the corpus luteum; it is described by Fallopius, Malpighi, De Graafe, and Rœderer; and

its development is not the effect of the male semen, but is a peculiar function of the ovary; it is an indispensable preliminary necessary for conception; it has been found in women who had not conceived, by Rœderer, and in virgins by Haighton, Vallisnieri, Santorini, Bertrandi, Sir E. Home Brugnone, and Cruikshank; in mules, by Brugnone; and in animals whose Fallopian tubes were tied before coition, by Haighton. The male semen is said to be carried by absorption, or by a peristaltic motion of the womb and tubes (Galen, Fallopius, Morgagni, Hunter, Magendie, Richerand, Blumenbach, and Ruysch); and Haller found the sperm in the Fallopian tubes of women and animals, who were killed immediately after coition. Dr. Haighton tied the Fallopian tubes of rabbits and incised them; the animals lost all desire, were barren, and yet the copora lutea were said to have formed.

The transmission of a subtile vapour, effluvium from the male semen (aura seminalis) through the womb, one of its tubes, to the ovary, which impregnates an ovum, egg, or vesicle, which passes through the tube into the womb and is there developed, is a disputed theory.

The illustrious Harvey made a vast number of dissections of hinds after copulation, and never discovered the male fluid in the womb; hence arose the doctrine, that a vapour arose from it—aura seminalis—which passed through the womb and tube to the ovary, one of whose ova or vesicles it impregnated; and that the ovule was conveyed through the tube into the womb to be nourished.

In support of this theory it is urged that impregnation has happened though the hymen was perfect, and closed up the orifice of the vagina, except at the upper part, when no penetration of the male, further than between the external labia, took place. There are many cases of this kind on record; and a most remarkable one was lately described by Dr. Kennedy, of Dublin: I have also been consulted in similar examples. The penis does not enter the orifice of the womb, which is not much larger, in the unimpregnated state, than that of the male urethra. I have known several instances in which the application of the male fluid between the external labia caused impregnation; a fact also attested by Dr. Blundell in his lectures in the Lancet. "I know three cases in which the male organ was not suffered to enter the vagina at all, and where, nevertheless, I suppose, from the mere deposition of the semen upon the labia, impregnation took place. I have known women astonished to find themselves pregnant, being persuaded that impregnation was impossible, until, to their sorow, the unwelcome truth was unfolded. In a word, from several facts of this kind, too delicate for a fuller disclosure, I am satisfied that very small quantities of the semen introduced into the lower part of the vagina, where there is an aptitude to become pregnant, will give rise to the new structure." (Principles and Practice of Obstetricy, &c. 1834.) I have also recorded cases of imperfect penetration and prolific connexions, when the penis was so destroyed by disease that it was no more than half an inch in length.

I have been confidently assured by a gentleman of veracity, that he impregnated a woman although he barely penetrated the vagina; his paramour consulted me, perfectly unconcious of what had happened, for she was inebriated at the time, and she most positively denied, when I stated she was pregnant, that it was possible, as she never knew man. My opinion was, however, unaltered, and I advised her to consult other obstetricians as to her condition. Several eminent obstetricians told her she was not pregnant; she called on me again and again, and every time the womb was more developed, and at last she felt the motion of the fœtus. Her paramour at length made the above confession; she recollected the circumstance of their having been together, and of his having induced her to drink too freely; and at the end of the ninth month, I delivered her of a healthy full-grown infant. Her case attests a fact I have stated in my work on Medical Jurisprudence,—that a healthy woman may be impregnated unconsciously, during inebriation, narcotism, catalepsy, and profound sleep. I have also known cases in which the greater part of the penis was destroyed by disease, or amputated close to the pubis, and yet persons so mutilated have continued to propagate. In such cases, there can be but very imperfect penetration, but the expulsive power of the ejaculatory muscles of the penis remains in its natural condition. These, and similar cases, prove that perfect or deep penetration is not necessary for procreation, and they also favour the third theory of absorption of the semen from the vagina.

These cases also show that it is not necessary that the male semen should be in-

jected into the womb. Dr. Blundell supposes that, when there is a deposition on the vulva, generation depends on the admixture of the male fluid with the secretions of the female: "for dilution does not destroy the fecundating power. If a glass of a certain height were filled with water, should sugar be thrown into the bottom of it, this, on solution, might soon be perceived in the upper part of the fluid, especially if agitation occurred; so the fecundating secretion may, by admixture, have penetrated to the inmost recesses of the genitals, more especially if the secretion of the genital surface be copious." He goes on to observe, that children are sometimes not procreated for want of sufficient penetrative power in the male organ, which I very much question, for the reasons just stated. He alludes to the experiments of Spallanzani, who found that three grains of the semen of a frog, dissolved in two pints of water, were sufficient to give it a fecundating power; even that small quantity taken upon the point of a fine needle, from which Dr. Blundell infers, "if the female genitals be apt for conception, the requisite quantity of the male material is small," p. 67.

In reviewing Dr. Blundell's opinions, I am bound by the many facts I have adduced in this lecture, to observe that they are, in my opinion, liable to many unanswerable objections. Repeated consultations enable me to state, that a complete emission of the male fluid at the interval of twenty-four or forty-eight hours will rarely, if ever, cause impregnation; nor do I comprehend the possibility of the germ or ovarian fluid passing into the womb to mix with the spermatic fluid of the male; and, therefore, the requisite quantity of the male material for impregnation, is not so small as is above supposed. Neither can I perceive any analogy between the mixture of sugar and water and the spermatic and ovarian fluids; nor do I believe that children are sometimes not procreated for want of sufficient penetrative power in the male organ. The orifice of the uterus is generally within two inches or two inches and a half of the external genital aperture, though it may be more distant, or be elevated under certain circumstances, and the slightest penetration when the semen is elaborate, is sufficient for impregnation.

Lastly, it is to be recollected that the conclusions of Spallanzani refer to frogs, and not to human species, and therefore it does not follow that such extreme dilution, as in the former cases, can ever happen in the latter, though there is generally some dilution of the male fluid. If this were the fact, the male material would be always prolific; but this is not the case, unless it has remained in the seminal receptacles for some days, as observed by Harvey and others. Many proofs of this fact have fallen under my own consideration.

The mucus of the seminal receptacles, the prostatic fluid and urethral mucus dilute the male fluid, as well as the vaginal and uterine mucus in most cases during the seminal emission; but this last dilution does not always happen.

The case mentioned by Mr. Hunter, in which his patient injected semen into the vagina and caused impregnation, appears to me open to objection; and I should think there was a more legitimate cause for the procreation.

On a careful review of all the theories of human generation, we can only arrive at the conclusion, that a union of the sexes is necessary, that both should be in good or tolerably good health, and that the function ought only to be performed when dictated by nature.

It would occupy too much time in a course of lectures, were I to introduce the history of comparative and human ovology, or the developement of the impregnated ovum from conception to the period of delivery, which I have already done in my work on Obstetricy, and in my Lectures on Midwifery and Diseases of Women and Children, published in the London Medical and Surgical Journal, 1836, and to which I must refer the reader. I shall now content myself with describing the influence of the maternal imagination on the fœtus in the womb; the hygiology of women during pregnancy, parturition, the puerperal state, and lactation or suckling; and conclude the physiology of generation with an account of the function of parturition, the assistance required during that process, and offer a few hints for the physical education or management of the new-born infant.

Fœtus in the Womb.—All obstetric writers agree that the circulation between the mother and the infant is interrupted, and also that there is not a direct nervous connexion between them. Nerves have never been discovered in the placenta or its continuation, the navel cord, which passes into the infantine abdomen. The mind of the mother, therefore, cannot have a direct influence upon the fœtus, no

more than the circulation of her blood. Mental and corporeal excitement may derange the function of the brain, nervous system, heart, and digestive apparatus; but such derangements have only an indirect effect upon the fœtus in utero. It therefore follows that the imagination of the mother cannot mark or deform the offspring, for if it could, no infant would be perfect; because there never perhaps was a pregnant woman who was not frightened, or who was free from longings during her condition; and yet how few deformed or disfigured infants are born. The imagination is excited in every case of pregnancy, there is a constant cause, but very rarely an effect. This is bad philosophy; for every obstetrician engaged in practice has repeatedly known pregnant women who had ungratified longings, who had been frightened by dismal objects, or had met with dreadful accidents or misfortunes, and yet their infants were perfect. We see this fact illustrated every day in this metropolis. Nevertheless, the belief is general among the middle and lower classes, and even among some medical practitioners, that the frights, longings, and imaginations of the mother can mark and deform the offspring; but this opinion is contrary to nature, reason, common observation, and medical science. I have known hundreds of instances in which women feared that their infants would be marked, but I never met with one case in which such anticipation was confirmed. The belief in this error is, however, of great antiquity. I have given a full refutation of the incredible fables reported as illustrations, in my work on Midwifery.

All these monstrous facts occurred in the sixteenth and seventeeth centuries, which were remarkable for superstition, ignorance, and credulity. A most singular illustration of the credulity of that era is afforded by a writer named Goftr. (Hegenitii Itinerarum, &c., 1330.) This traveller states that he saw a tablet in the church at Leusdown (Lausdunum), about five miles from the Hague, with an inscription to the following effect:—that a certain illustrious countess, whose name and family he gives, in the fortieth year of her age, brought forth, at one birth, in the year 1276, three hundred and sixty-five infants! all of whom were baptized by Guido the suffragan, who called the males "John," and the females "Elizabeth," all of whom, with their mother, died on the same day, and were buried together in the above temple. This happened on account of a poor woman who carried twins in her arms, which the countess declared were not the offspring of one man, and this so incensed the mother that she prayed that her insulter might have, at one birth, the same number of children as there were days in the year. No rational individual can credit this story, though it is attested with much plausibility.

HUMAN OVOLOGY.

Physiologists hold that the ovum, or germ, is an organic production of the ovary, which is developed by the semen. In oviparous animals the yolk only is formed in the ovary, and a whitish tunic or shell in the oviduct. A tunic is formed in mammiferous animals in the uterus. Baer has ascertained the rudiments of the ovum along time before fecundation, in the vesicles of the ovary in the middle of a mass of granulations, in the form of a cone whose base is fixed to the wall of the vesicle, and its apex turned inwards. The ovum or ovule is from one-eighth to one-fourth of a line in length, is spherical, hollow, composed of two membranes and a liquid. When it escapes from the ruptured vesicle and penetrates into the oviduct, it draws with it the granulated membrane, which forms a kind of disc. Baer considers the mammiferous ovum or ovule and oviparous analagous. Velpeau considers the ovule, before incubation, as composed—1. Of a substance destined for the formation of the embryo, *embryotrophe;* 2. Of an organ from which springs the formative force fixed for the commencement of life, *blastoderme, membrana germinativa, or prolifera;* 3. Of an envelope composed of two bodies which protect it, at the same time that it establishes the reciprocal action with the exterior world, and the two first organs of incubation, *membrane of the shell.* These three parts are named, *nutritive, living,* and *protective,* they exist in the ovules of all organised beings. Sometimes there is an external envelope which covers the nidus or progeny.

The vitellum, yolk, or yellow snbstance in animals is the immediate product of the ovary. This yellow substance is albuminous and oily. The ovary furnishes an excessively small portion of embryotrophe, in proportion to the living part which afterwards takes the nutritive materials of the oviduct and womb. An albuminous fluid also exists between the chorion and amnios.

The external surfaces of the embryo-

trophe forms its external coverings, which are the limits of the organised surface. Different membranes unite to form one envelope, and this is covered externally with a coagulum. The envelope of the embryotrophe has no vessels, but is perspirable to exterior substances—*cuticula ovi.* In plants it is called external perisperme (Theviranus), secundæ externæ (Malpighi), testa (Gartner), shell (Tidemann.) The cuticula ovi is formed in oviparous animals by coagulation of the surface of the embryotrophe, and this is the membrane of the shell (*membrana testuca.*) It is formed in the ovary, and is coeval with the embryotrophe. When this last is double the membrane is multiplied. It forms the membrane of the yellow substance, cuticula ovi on the exterior surface of the yellow part by the condensation of this last. It is without vessels, and without communication either with the yellow part or the internal surface of the ovary. It is only by the absorption of fluids, arrested by the ovary, that the yellow substance can augment. This last, and its membranes, are called globus vitellarius by M. Velpeau. When this is recovered in the oviduct of the secondary embryotrophe, it forms on the surface of this an exterior membrane, or that of the shell. In the egg of the pullet it is rough on its external surface ; flocci lodge in the inequalities of the shell, and compose two layers united, except at the larger end where their separation forms a sac of air.

The ovule of the mammiferæ has been described as a simple vesicle filled with fluid (Kuhlemann, Graafe, Prevost, Dumas, Meygrier, &c.) Baer has shewn that there are two distinct membranes, as Cruickshank observed in the rabbit. The exterior is finer, more transparent than the internal, and is covered with inequalities which become villosities at a later period. This is called exochorion. The chorion is enveloped by the Hunterian membrane (decidua, caduca), and it covers the aminos, the umbilical vesicle and allantois, and is composed of two layers connected by a layer of vessels described by Wrisberg, Krummacher, Dutrochet and Emmert. These two membranes are distinct until the second or third month of uterogetation when they become confounded. M. Velpeau denominates them *endochorion* and *exochorion.* The *exochorion* is external, and connects the ovum with the exterior; the *endochorion* supplies the umbilical cord, and runs with it to the abdomen. The *exochorion* has no vessels, but at a later period the *endochorion* supplies these to form the placenta. The endochorion which accompanies the vessels has the same relation to the *exochorion* as the external vascular layer to the membrane of the shell, only here the vessels do not penetrate this last. The villosities on the external surface of the *exochorion* are analagous to the flocci of the membrane of the shell, which lodge themselves in the anfractuosities of the shell. Finally, the exochorion is transparent, whitish, firm, tenacious as the membrane of the shell, without the shell. But it is not separated by a yellow or white membrane, or a yellow membrane covered by a white one.

The *exochorion* is the first part formed in the ovum or ovule. This is analagous to what takes place in the membrane of the shell. The embryotrophe secreted by the ovary commences to limit itself by the condensation of its surface. So in the ova of insects, a yellow substance without a white one constitutes the embryotrophe, so that the membrane of the shell is immediately applied on the embryotrophe and the blastoderme; and the ova of mammiferous animals is disposed in an analagous manner. The external membrane of the mammiferous ovum or ovule in the ovary has inequalities, which alternately form the villosities (Maygrier.) Baer has not discovered any external membranes. If we conclude from this, that the external membrane is formed first, and always remains external, we shall infer how it is constituted by the exochorion. For the endochorion springs from the embryo itself with its umbilical vessels, and cannot exist independently of both. This is the reason that twins have usually one caduca or decidua in common, but distinct chorions. When the chorion is common to both, it may have been formed by two chorions, at first distinct, or two embryos may be developed in one chorion.

The living or formative part of the ovum is the membrane of the germ (*membrana germinativa sive prolifera blastoderma*) or blastoderm, which is seen between the embryotrophe and the external membrane. When the embryotrophe is simple, it is found on the internal surface of the membrane of the shell, when it is double (yellow and white) it is on the internal face of the membrane of the yellow substance. In plants it is called the internal membrane of the grain (*chorion*) Malpighi, (*nuclearium*) Tideman, (*endopleura*) Decandolle.

The blastoderm of viparious animals is formed by a secretion of a granulated mass on the surface of the yellow part. Its base, is a granulated disc, *discus proligerus*, which is situated immediately under the membrane of the yellow substance, is transparent, and is seen like a navel, cicatricula, and a granulated cone, *cumulus proligerus*, which projects from the yellow substance. The globes or granulations of these two parts, or of the *stratum proligerum* are intimately connected with each other, and form a part of the yellow substance. There is also a vescile, *vesicula proligera*, found in the egg of the pullet, by Purtrinie, and in all oviparous animals by Baer, which exists at the formation of the ovum, occupies the centre of the yellow or yolk, turns towards the *stratum proligerum*, and disappears towards the maturity of the animal. When this last descends from the oviduct, it perhaps ruptures and effuses its liquid. It is from this liquid, from a portion of the yellow substance, and from the stratum which then disappears, that the blastoderm is formed in the shape of a disc, composed of granulations which continually increase, envelope the yellow part, and tend to form a vesicle at the same time that it forms the embryo. Baer has discovered within the exochorion of mammiferæ, and separated from it by a small space, an opaque globe of granulations containing a small cavity, in fact, a vesicle with thick walls. He has found it in the ova of bitches. Baer regards it as the membrane of the yellow substance, within which the blastoderm is formed. Velpeau thinks it the blastoderm itself. This last in oviparous animals does not assume a vesicular form at first, but on account of the considerable volume of the yolk. In mammiferous animals the yellow part is excessively small, and the blastoderm is vesicular. The cumulus proligerus indicates the point of the blastoderm, or where life and the formative force is concentrated and excited, or where, at a later period, the embryo is formed.

There is a great and close analogy between the reproduction of plants and animals. In each there is a nidus. The sacs of the germs of the infusoria, of the polypi and acephala, bear a close analogy to the pericarp. In leeches and the mollusca, the ova are placed at the extremity of the oviduct, enveloped by a mucosity secreted by the collateral organs. The number and arrangement of the ova vary. These organs secrete a fluid which becomes indurated, and forms a sac which surrounds one or many ova. The ova of fishes are also enveloped in an abluminous fluid, and this becomes solidified in some species. In frogs there is also a secretion of albumen, which re-unites the ova to another.

In mammiferous animals there is a membrane, the decidua of Hunter, and epichorion of Chaussier. Fabricius ab Aquapendente was the first who examined the ovum, and, anatomically, he was succeeded by Faber, but both fell into much error. The illustrious Harvey, the pupil of the former, examined the ova in warm blooded animals, and was the first to establish accurate facts. He confined himself chiefly to the investigation of generation, and said little on the anatomy of the ovum. Hoboken followed, and described the afterbirth, or placenta of the human subject and of the cow. Drelincourt gave an account of the amnios and chorion; and Ruysch maintained the vascurality of the latter. Rohault contended, in 1716, that the placenta was formed by thickening of the chorion, that its spongy tissue was composed of capillary veins from the umbilical vessels, and denied that there were anastomoses between these and the womb. In 1734 Dr. Simson, of St. Andrew's, attempted to prove that the placenta is formed by the chorion; and in 1754 Albinus held that it is formed of blood-vessels, cellular membrane, and membranous investments from the chorion. Noortwyth in 1743, Rœderer in 1750—58, added further elucidation to the anatomy of the ovum; and Haller soon after examined all that had been written on the subject, offered his own observations, and gave the best account of ovology. He described four investments of the embryo, the membrana ovi exterior (decidua of Hunter), the chorion (decidua reflexa), the membrana media (chorion of Albinus), the allantois of Needham, Diemerbroeck, Bidloo, Horder, and Hoboken, (chorion of Hunter) and lastly, the amnios, containing a fluid in which the embryo floated. Dr. Hunter was the next writer and was supposed to have given a correct account of ovology. He held that the decidua consisted of two membranes at one period of uterogestation—that the chorion formed the next or third membrane from the second to the fifth month, and from this period to the end of pregnancy the second, and that the placenta composed of two layers, maternal and fœtal portions, which did not communicate with each other.

According to Velpeau, whose observations are more extensive than those of any author in existence, there are new views on this subject. He says that the uterus is excited by conception, not inflamed, as stated by Breschet; that it becomes covered with an opaque, yellowish, reddish matter, which has the form of the uterine cavity, from which it is easily detached. Its external or uterine surface is spongy and tomentose, whilst its external one is smooth and polished. It has vessels which may be injected through those of the uterus, but are soft and easily broken. It is thinnest at the neck of the womb, and also less vascular. This membrane was found by Lallemand and Boudelocque in extra-uterine fœtations. Dutrochet denied its vascularity. It is formed about fourteen days after fecundation, and acquires its greatest developement about the commencement of the second month, but it diminishes after the sixth week, when the villosities are shorter and less numerous. M. Velpeau contends that the matter which forms the decidua is gelatinous and mucous, differs from the products of inflammation, is inorganic, and hence he terms it anhiste, or tissueless membrane.

The ovule, according to this celebrated professor, after its descent through a tube towards the uterus, does not sink into the soft matter of the decidua, as maintained by Breschet, but depresses this membrane, glides between it and the womb, becomes attached to the latter organ, but not to the decidua; that as it grows it consequently pushes this membrane forward, and forms the decidua reflexa, or ovuline decidua of Lee and Owen. The invagination commences about the third week, and is very apparent at the sixth. The reflected portion is nourished by the vessels which penetrate at the point of reflexion. The decidua is therefore a nidus for the ovum, is the means by which the uterus acts on the embryo in the early weeks of gestation, and dies when the communication is established by the placenta. It is analogous to the pericarp and nidus of oviparous animals. It is no part of the ovum, and therefore is not analogous to the membrane of the shell, as said by Cuvier.

M. Breschet differs from the former and maintains that the ovum is too small to push down the decidua, but becomes attached to it or imbedded in it; that the uterine and reflected deciduæ are interposed between the uterine mucous membrane and the placenta in a very attenuated form. The villosities of the ovule become adherent to the ovule; and as the growth of the ovule advances, these diminish over the general surface, become restricted to a single point, press the decidua reflexa to the uterine decidua, and give rise to the origin of the placenta. It appears then that the chorion forms the placenta.

M. Velpeau forms a different opinion, and one better entitled to adoption. He denies the existence of a membranous fold between the placenta and the uterus in the early part of uterogestation, but so soon as the tomentose or villous filaments of the chorion agglomerated into one mass, it begins to appear as covering their apex and soon becomes confounded with the anhistal or decidual membrane. It is not vascular, it presents the disposition of the arachnoid membrane, adheres to the lobules of the placenta, and dips between them.

The origin of the placenta is the point of vascular connexion between the ovum and the uterus. The ovum may pass along the fundus uteri as the decidua is not very adherent at this part. and in 20 out of 34 dissections the placenta was found near the orifice of the Fallopian tube. The ovum may descend between the decidua and uterus towards the neck of the womb, aud adhere to any point of this organ.

Velpeau holds that in the state of vacuity the mucous membrane of the uterus is not separable. The rarefaction which uterogestation induces in the elements of the gravid womb, renders the mucous membrane easily separable in flakes or pieces, offering superb arborizations, of a density equal to the peritoneum, with all the characters of a distinct membrane, firmly united by numerous organic filaments to the womb. I conceive, continues this celebrated professor, that this may be mistaken, and taken for the caduca or decidua. Thus may be explained what W. Hunter, Carus, Seiler, Burns, and a host of others, have said in favour of the vitality, the organic state, and of the texture of this last tunic. M. Velpeau maintains that Dr. R. Lee and Mr. Radford of Manchester, have recently fallen into this error, and mistook the mucous membrane of the uterus for the caduca or decidua. (Ovologie Humaine—Embryologie 1833. Introduction, xviii. xix.) He holds that the caduca does not pass between the uterus and placenta; and that at the seventh month of uterogestation, there is only a line of demarcation between the circumference of the placenta,

nd the ancient folded circle of the decidua of Hunter.

According to Velpeau and Lee, the placenta is developed between the chorion nd the decidua vera, that is between the ecidua reflexa or the chorion and the nternal layer of the tissue of the womb; nd the latter relates six examples in vhich the caduca adhered so firmly to the lacenta that it could not be detached vithout laceration, that no large vessel of ne womb opened into the placenta, and hat the large oblique openings on the inernal surface of the womb are closed by he interposed caduca. Velpeau held his last opinion in his Tocology before Dr. Robert Lee published on the subject.

All modern embryologists are of this pinion, Lee, Owen, Craigie, Radford; ut it is by no means determined whether he interposed membrane is decidua or horion, though I am disposed to think vith M. Velpeau it is not the former. He also opposes, most successfully, the loctrine of Hunter and his followers, that he blood of the mother is deposited in he cells of the placenta, and thence conveyed to the fœtus, on the following rounds:—1. In extra-uterine fœtations his opinion is untenable; 2. The placenta, until the third month, consists of gglomerated filaments only, and no inuses exist between its lobules; 3. When the placenta is attached to a fibrous olypus, or indurated part of the womb, he embryo is duly supplied with nutrition; 4. The uterine surface of a women ecently delivered was hard, healthy, and vithout orifices; 5. And lastly the sinuses r canals of the womb are veins, and herefore it must be venous and not arteial blood, which is supplied to the fœtus. Dr. Robert Lee and Dr. Nimmo of Glasgow, deny that arteries or veins enter the lecidua (chorion, Velpeau), and hold that he placenta is made up of the umbilical essels, and has no maternal portion. Velpeau was of this opinion in 1829 (see his Tocology), and that the placenta performed the function of lungs. Dr. Lee maintains that the whole uterine blood, except the small quantity which supplies he decidua, is returned by the spermatic nd hypogastric veins, and does not enter he substance of the placenta. Whatever change the fœtal blood undergoes, must e effected from indirect exposure to the lood of the uterus, the decidua or chorion being placed between the placenta nd uterus. The change must be somewhat analagous to that of the blood in the lungs, a membrane being interposed between the vital fluid and the air, and between the fœtal circulation and that of the mother. It is also remarkabie that the umbilical vein, like the pulmonary conveys arterial blood to the fœtus. Dr. Blundell asserts that the colour of the blood in the umbilical vein and arteries is the same, and it contains an equal quantity of carbon in both. Upon the whole this part of physiology is not understood at present. See page 85 of my Manual.

He maintains that the chorion adheres directly to the uterine surface without the intervention of any intermediate membrane, such as the decidua, and when he tells us that he had inspected 400 ovules, we are bound to prefer his conclusions to those of Dr. Robert Lee and Mr. Radford, neither of whom had such opportunities. He, in common with, and long before Dr. Lee, maintained in his work on Tocology, in 1829, that the sinuses of the uterus were not continuous with the vessels of the placenta, but that a membrane was interposed the maternal or external surface of the placenta and uterus. Others deny this doctrine, as appears by the quotations in p. 75 of my Manual. W. Hunter maintained that the vessels of the womb anastomosed with those of the placenta; but his predecessor, the illustrious Haller, and his pupil Donald Monro, were of a different opinion. (Essays Phys. & Lit., vol. i., pp. 404, 408—S19.) See p. 75 of my Manual of Midwifery, 3rd edition.

The vesicula umbilicalis is a small pyriform globular sac, observable from the fifteenth to the twentieth day after fecundation (Velpeau), on the forty-first day (Autenreith), is from two to four lines in length (Velpeau), and six lines in diametar (Lobstein). It is about the size of a garden-pea. It becomes smaller after a month, according to Velpeau, and about the sixth or seventh week it is reduced to the size of a coriander seed, becomes flat, and disappears insensibly. In some instances it was not found in the third month, though Hunter and Meckel found it of its largest size at the end of the uterogestation. It is situated between the chorion and amnios, contains a gelatinous yellowish oily fluid. It is sometimes attached to the amnios and sometimes to the chorion. It has been floating in ova of two or three weeks (Velpeau.) A pedicle or duct runs from the vesicle towards the embryal abdomen, and terminates in the ileum or cœcum. It varies in length from half an inch to an inch and a half.

The umbliical vesicle is supplied by an

artery from the inferior mesenteric, and a vein arising from its own parietes, which enters the superior mesenteric vein. These vessels are termed *ompholo mesenteric* vessels, and by M. Velpeau *vitello mensenteric*, and *vitelline vessels*. He denies that they originate or terminate in the mesenteric artery or vein, as he has frequently observed them lost in the spongy tissue of the umbilical stalk. These vessels have been observed by Chaussier and Beclard in the funis of the full grown fœtus, in the form of white filaments.

Use.—According to M. Velpeau, and other physiologists, the fluid of vesicula umbilicalis is a nutritious oil similar to the vitelline fluid in the chick. He says that in the chick it enters the abdomen entirely, while in the human fœtus it recedes from the abdomen as pregnancy advances. It nourishes the embryo until the umbilical vessels and cord are developed.

The *allantois* is a sac found between the chorion and amnios in the cow, sheep, bitch, reptiles, and birds. This was denied to exist in the human embryo. M. Velpeau has detected a transparent layer, of a slightly greenish colour, not serous, but lamellated, like the vitreous humour of the eye, and diminishing in thickness in proportion as the other membranes are developed. As it diminishes in thickness it soon forms a homogeneous pulpy layer, and is finally converted into a mucous coating, and disappears in general before delivery. M. Velpeau designates this substance *corpus reticulatum*, and considers it analagous to the allantois in oviparous animals. He denies that the reticulated body, or the allantois, has any relation to the kidneys or bladder.

The *vesicula erythroidea* has been considered by Blumenbach as analagous to the vesicula umbilicalis. It forms the intestinal tube in the opinion of Dr. Pockels, and it has no existence according to Velpeau. The general opinion of physiologists is, that the erythroid membrane does not exist in the human embryo.

Another part at this period of embryal life is the *Urachus*. Besides the two arteries and the vein in the funis, there is a cord extending from the fundus of the bladder, passing out at the navel, accompanying the blood-vessels, and terminating in a sac between the chorion and amnios, called the allantois. There is an impervious cord running from the fundus of the bladder to the navel which is called the urachus, and does not pass into the funis or navel-string. This sac is perhaps the vesicula umbilicalis in the human embryo.

When there is a plurality of infants, each has distinct placenta, and a set of membranes. The circulations of the blood are distinct. In some rare cases there is but one placenta for both infants, and hence the application of the second ligature to the navel string, lest the fœtus remaining in utero might bleed to death.

The London Medical AND Surgical Journal.

Saturday, August 5th, 1837.

CHANGES IN THE EXAMINATIONS AT THE ROYAL COLLEGE OF SURGEONS FOR ITS DIPLOMA.

In our Number for March the 4th will be found an able and interesting communication signed a REFORMER, in which the writer gives a serious, though not the less faithful account of the style in which the examinations of candidates for the diploma of the Royal College of Surgeons, and for the certificate of the Worshipful Company of Apothecaries in London, were conducted by the councils of these learned and scientific bodies. A contrast also was accurately and sensibly drawn by the writer between the examinations at the Dublin College of Surgeons and the London College, in which it was clearly shown that whilst the former corporation required from the student an intimate acquaintance with the fundamental parts of his profession, and conducted its examinations in a public manner, the latter was content at "*one nightly sitting with closed doors,*" to send forth to the world as many as ten or twelve newly

manufactured surgeons, after each having undergone the absurd mockery of what was styled a "*solemn and careful*" investigation into their professional capabilities; which investigation usually occupied *ten* or *fifteen minutes!*

The effect the communication we have alluded to, together with our own leading observations, had on the council of the College of Surgeons, was to induce that body to take into its deliberate consideration the immediate propriety of making some alterations in the then grossly inefficient method of its examination.

It is but justice to state that Sir Astley Cooper, Sir Benjamin Brodie, and Mr. Lawrence, were the foremost individuals In bringing the matter under the consideration of the council; and although the latter of these gentlemen strenuously urged upon his colleagues the great advantages a public examination offered, and the startling effect he was satisfied, from his former experience, it would have on the medical senate of the NEW REFORM UNIVERSITY, yet he readily yielded to the insinuating arguments of the two worthy baronets, when he had ascertained that all the members of the council, with one disgraceful exception, were inclined to adopt the suggestions offered.

The result of all this has been that instead of the former farce being performed, of a student taking his place in front of the PRESIDENT, and the PRESIDENT, in solemn mockery, desiring him not to be discomposed, at the same time looking as fierce as possible, and nodding to Mr. A. or Mr. B. to commence the probing, during which operation the junior listeners were playfully disporting themselves in convivial conversation, and the seniors comfortably reposing under the influence of their after-dinner orgies—an examination more extended, and infinitely more becoming the college has been adopted. There are at present three distinct examination tables, at each of which there are, in general, three examiners, and the student has to undergo an examination at each, which usually lasts from fifteen to twenty minutes. A register is kept at each table of the answers given to the several questions by the candidate, and the style of answer is marked good, bad, indifferent, and so on. When the candidate retires those papers undergo a *general* scrutiny, and his admission or rejection is decided upon; but should there be any doubt of the matter, the candidate gets the benefit of it, and receives a series of written questions, and according to the answers he delivers to them in writing, depends his final chance!

Desirable as this reform is, and for the effecting of which we take to ourselves some credit, there are many other changes which must take place before any fair degree of confidence can be placed by the public or the profession in the exercise of the important duties which devolve on the Court of Examiners of the London College of Surgeons.

As a specimen of the new method of examination we subjoin the following:—

CANDIDATE, MR.———.

FIRST TABLE.

Present—Messrs. Thomas, White, and Vincent.

Examiner—Mr. Thomas.

1. Bones of upper extremity.
2. Nerves of upper extremity.
3. Carpal bones, and sprains of wrist joint.
4. Ligaments and interarticular cartilarge.
5. Muscles of the fore-arm.
6. Operation of taking up the brachial artery.

SECOND TABLE.

Present—Messrs. Guthrie, Keate, and Andrews.

Examiner—Mr. Guthrie.

1. Suppression of urine.
2. Retention of urine, its causes, and treatment.
3. Prolapsus ani.

THIRD TABLE.

Present—Sir A. Cooper and Sir Anthony Carlisle.

Examiner—Sir A. Cooper.

1. Superior maxillary bone.
2. Branches of internal maxillary artery.
3. Tic dolouroux, and incision of infra-orbital nerve.
4. Wounds of knee-joint and extraction of loose cartilages.
5. Enumeration of teeth in the adult and child.
6. Anatomy of kidney.

Thus it appears that the examination is tolerably extensive in theory, but miserably defective in a practical point of view.

HONOUR CONFERRED ON THE MEDICAL ATTENDANTS ON HIS LATE MAJESTY.

Dr. Davies has had the honour of Knighthood conferred upon him, for his eminent services at the death-bed of our late beloved Sovereign; and it is not many months since he received his medical degree from the Archbishop of Canterbury. The learned Doctor having been Knighted on this occasion, must be particularly gratifying, as the same honor has not been conferred on any of the other medical attendants of his late Majesty. Dr. Chambers got only the Guelphic order of the first class; and Sir Henry Halford being already a Baronet, received the Guelphic order of the third class.

RE-ELECTION OF MR. WAKLEY.

The friends of medical reform express universal satisfaction at the re-election of this able statesman, although the profession have had as yet to regret that he has been able to effect little for the great cause; yet let us hope that an opportunity will occur of his redeeming those pledges with which he so often and so energetically taunted the corruptionists.

THE ORATION

DELIVERED BEFORE THE

MEDICAL SOCIETY OF LONDON,

AT THEIR

Sixty-fourth Anniversary Meeting, March 8, 1137.

BY EDWARD HEADLAND,

One of the Honorary Secretaries of the Society, &c., &c.

[The following observations on the present state of the profession deserve attentive consideration, and reflect much credit on the independence of their author. We have, therefore, much pleasure in quoting them.]

The present division of the profession into grades, and the subdivisions in the separate colleges or corporations, you are all so familiar with, that it would be a matter of unnecessary detail to describe them; I would only remind you that there is scarcely one of *you* whom I have now the pleasure to address who is not by their bye-laws excluded from the honours and emoluments of the college or corporation to which he may be attached. Now, I would ask, would not any person unacquainted with the fact, conclude that there must be an essential difference in the

education and consequent competency of the several practitioners in medicine, according to their academical rank? would they not be surprised at being told that so far as medical education is concerned, there is *no* essential difference between the Fellow of the College of Physicians and the extra Licentiate of that body; or between the President of the College of Surgeons, and the ordinary member of that body; or between either the physician or the surgeon and the apothecary; but that if strict examination be a test of competency, it is more perfect as regards the lowest of these grades than the highest—nay, that the apothecary is required to give evidence of greater knowledge of the sciences collateral to medicine than even the physician.

It has been well remarked, that it is the business of every good government to provide the greatest good for the greatest number; and in that spirit originated a measure, some twenty-two years since, which was considered by the legislature to be a test of competency to practise medicine—yet, after the many toils he has endured to obtain this proof, he who succeeds is contemptuously termed an *apothecary*, from my lord to the shop-boy, and deemed subordinate to all other ranks in his profession—and why? Is it because he has no knowledge of medicine and the sciences that belong thereto—or because he has not the preliminary of a good education? No, for his examination is a proof of the sufficiency of both; but because he belongs to what by custom is considered the lowest grade of his profession. And so it is with the profession itself—each in the ascending scale endeavours to elevate himself upon the supposed inferiority of the one below him, from the Fellow of the College to the Licentiate of the Apothecarie's Company.

Now, if any person will only pass his eye over the whole list of the College of Physicians, he will perceive how insufficient they would be, as regards numbers, to the medical relief of the British population; for let their services be ever so equally divided, it is of course impossible that 462 persons can be adequate to the relief of the 16 millions and upwards which England and Wales alone contain, being in the ratio of one to every 34,482 persons. If, therefore, you admit what long standing custom seems erroneously to have established, that the competency of persons attached to this body is greater than that of those who are otherwise qualified, it necessarily follows that the great bulk of the community are constantly without the assistance of the highest order of medical knowledge; thereby making it appear, that there is to be one kind of medical relief for the rich and another for the poor. Must not this reflect also upon the government, whose duty it is to provide the greatest good for the greatest number, and render the Act of Parliament to which I have referred apparently useless?

The Company of Apothecaries too, be it remembered, is not the only body which provides medical practitioners unconnected with the College of Physicians, for the London College of Surgeons is constantly pouring forth large numbers of highly endowed individuals, who, superadded to their surgical attainments, are constantly affording us abundant proof of their medical sufficiency. Indeed it would be wrong to pass over them as a body, without reminding this meeting, that there are many distinguished men in their list, who may be said to have added by their researches very much to the improvement of modern medicine. I allude not simply to the physiological and pathological labours of these eminent persons, but to the well-known fact, that in addition to the improvement in mere chirurgy and mechanical aids, so much has been effected by them in the adaptation of medical agents for the removal of diseases which were formerly deemed incurable except by a knife, that the number of operations within the last twenty years has been reduced to at least one half—and thus they have contributed greatly to the relief of suffering humanity.

Facts go beyond all theory, and in this simple circumstance therefore I hesitate not to challenge a denial that this body eminently deserves a high rank among British medical practitioners.

In short, on a dispassionate and honest consideration by all who are competent to judge, it must be admitted, that all legally qualified medical practitioners of whatever grade, are, as far as their education is concerned, equally entitled to the confidence of the public. A higher degree of intellect, a greater fund of experience, or a more abundant measure of industry in availing themselves of that experience will constantly raise some men to a just superiority over others—but *these* should be the *only* distinctions—since, I repeat, that as far as education is concerned, all are absolutely equal.

Let me not, in what I have advanced, be supposed to be indifferent to the learn-

ing, to the high medical and philosophical acquirements, and gentlemanly deportment of those distinguished men who are ranked in the list of the Royal College of Physicians, and who so admirably support what I will term the aristocracy of physic. The body to which they belong, in an altered form, I believe it to be desirable should exist; for it should not be forgotten, that since the foundation of that body, there have been many eventful periods in English history, in which the agitations of the state have suspended the march of medical science, and during which periods, had it not been for this learned body, that science would have lost much of the dignity and honour with which it is at present invested,—and quackery would have shewn its protean head in even more murderous forms than it has already done.

But it is now my object to contend for the principle, that all classes of the community are entitled to equal medical aid, and that the present laws assume a difference. We must bear in mind that the distinctions in rank in practical medicine must necessarily differ from those in the other learned professions, law and divinity; the separate members of these professions may possess different degrees of competency without risk or inconvenience to the public—but with *us* it must not be so—there is not a case in which we are required to attend, but that we ought to be ready at the moment with the best and most efficient remedies; for, if misapplied remedies are not always immediately fatal they must always add to the sufferings of the afflicted, and not unfrequently thwart the more skilful means of relief which may be subsequently applied.

Let us consider, also, the injury which the bare imagination of a different degree of medical competency is likely to produce. How must it agonize the afflicted parent to think, that had better means been used, the life of a beloved child might have been saved—how must it add to the sufferings of the bereaved husband to believe, that the endeared partner of his life has been removed from the want of the due application of the best powers that art affords—or the delicate and helpless widow, cast upon the mercy of a pitiless world, without the means of providing for her numerous offspring, how can *she* support the thought, that there were other and better aids, which might yet have spared the heart that loved, and the arm which would have laboured for her! And yet our present classification really implies all this; else are we all alike, and there is no real distinction, no difference in the medical education, and consequently in the requisite competency, between the highest and the lowest.

And for the sake of our country, I feel proud to say this is the truth. If it were universally known that such is the advanced state of medical education that the examination for the lowest station, is a test that secures an efficiency of medical acquirements, as completely as the examination for the highest—if this were a fact that was thoroughly known, the comfort of the community would be in no small degree increased.

All else of evil in the present subdivision affects ourselves only. It cannot be denied, but that it is highly desirable that legislative interference, if the course could be well ascertained, should do away with the present distinctions; but until the end of such a measure can be well foreseen, I feel that it is almost "better to bear the ills we have, than fly to those we know not of." It appears to me, however, that during the time which must elapse before the fittest means can be resolved upon, it is unwise in the legislature to interfere by the adoption of partial measures, the tendency of which will be to create still further distinctions. I allude to a charter, recently granted, incorporating certain persons, for the purpose of granting degrees in physic and surgery. Now, if we put aside the obvious tendency which this has to injure well-established and reputed schools of medicine, still it appears to me, that it may also affect the reputation of the present race of medical men, and may moreover be said to have become law, without the voice of the profession having been heard. So also, I fear, must be viewed another charter, incorporating a Medical Society, which tends to establish a presumed greatness, deterring persons from joining more humble, but not less useful institutions of a similar nature. In this course, Government is perpetuating the great fault of sanctioning partial measures; measures that are not founded upon a thorough knowledge of the whole subject and its difficulties, and calculated merely to benefit particular individuals in connection with certain schools of medicine. These measures, I repeat, appear to me to be premature and ill judged; still, I think, that many will agree with me in believing, that our present system of medical polity stands in need of a thorough reformation.

Taken as a body, the practitioners in medicine, of all degrees, are admitted by the rest of the community to be of the highest respectability and education; they are. therefore, unlikely to raise complaints without just reason. But can we, who are in the early exercise of our practical knowledge, who are now sustaining the burden and heat of the day, can *we* endure, without complaint, the certainty of being for the rest of our lives, according to general definition, the same subordinate and inferior men? Can we behold unmoved that so many distinguished and learned individaals, in both Colleges, many of whom are rapidly passing to the decline of life, can we behold them sink into their graves, still marked as something inferior in talent and usefulness, when compared with the heads of their Colleges? Does not this apply to many of the highly-respected individuals who are associated with us; and where, I would ask, should we place their names in the scale of science, of learning, and of medical talent, had we the power to render them what they deserve? Go, I would say, to the sceptic upon this subject, bring me the men who are merely graced with high academical honours, ransack your universities, and summon the elite of all your colleges, and I should be proud to compare them with many whose names adorn the list of the Medical Society of London—and are they not of the excluded?

What men, I may fairly ask *you* who have so much experience of its truth, what men undergo more toil than medical men, who have to submit to more deprivations, who are denied the world's pleasures more than they?—to them there is no rest from their labours; the seventh day, which bestows rest upon all other men, brings little or none to them. It is indeed difficult fully to appreciate the labour and exertion which are required to give the professor of medicine anything like a competent knowledge of his art. Much, indeed, he may acquire from his academical pursuits, but much, also, he must learn by the closest observation. He must be content to spend many years, perhaps the best of his life, in ceaseless endeavours to gain fresh accessions of knowledge; yet perhaps will have the mortification to find himself still very far short of perfection. But, if he be honest in his search after truth, he will not resign his task, but, in spite of all obstacles, will still press forward. But can we endure to think that such an ardent and zealous student of his profession—and many such, I am well aware, there are among those whom I address—*he* who has spent many a midnight hour in study, and many an anxious day in earnest observation, should yet be condemned to comparative obscurity by the unjust regulations of that profession for which he has sacrificed so much?

Because all this devolves upon the general practitioner, is he the less entitled to the honours of the profession in his old age? Are the children of a man who has so laboured to feel that their parent is lower in rank than other men not more deserving? For it may be safely said, that the greatest probability of the success in a child, is the prosperity and honour of the parent; and if the child has not this advantage, he loses much in his future career; thus, on account our children, we have just ground for complaint.

It will perhaps be said that I am telling you things which are well known to you all, and for which there is no remedy. I have before expressed an opinion that an immediate legislative enactment would be inexpedient, and I believe it would be so, because a measure sufficiently comprehensive to meet the whole difficulty would necessarily do an injury to many persons, whose existence depends upon the present system. There would, perhaps it will be thought, be a more easy course, that of rendering every member or licentiate of each college or corporation entitled upon turn or merit to its highest honours; but in that way you still continue, with respect to medicine, the present absurd distinctions. But one of my chief objects in bringing this matter before you now, is to impress upon your attention that the best interests of our profession are to be promoted by the free intercourse of all its members, without reference to academical rank; all, who have sufficient zeal in the service of humanity to forego distinction, and who feel that it is due to the profession they have adopted, that they should bring forward every fact they can collect which may elucidate its obscurities, and who would be conscious of a dereliction of duty did they deceive the public by professing to be competent practitioners in medicine, unless they had, at the same time, exerted every faculty in the constant observation of disease. For it is only by such a close observation of disease, superadded to theory, that the student becomes really efficient; and it is in societies similar to this, that he learns how to properly appreciate such experience. It is in such associations that we learn how to disencumber ourselves of that which is useless,

and to select that which is of value; and it may be fairly said, that he who does not join some institution of this kind not only does not avail himself of abundant means of improvement, but in some measure neglects to give the public the best guarantee he can of his competency, by not constantly submitting his opinions to the scrutiny and revision of his more experienced brethren. In short, I should say, that it is to the extension of institutions like this that we should at present devote ourselves, to uphold the dignity and honour of the medical practitioner: it is by joining such societies that he gives the only proof in his power of his desire to increase his knowledge, and of his fitness to rank among the highest members of his profession. But it is not in its present limited form that it should exist; it should be increased for all its purposes at least tenfold. An extensive combination of this kind would do more than anything else, at the present moment, to elevate the interests of all, because it would bring into operation the advice and experience of all.

Again, it must be obvious that such societies are eminently useful in softening those unhappy differences and petty jealousies which too often arise among us. It must surely happen that kindliness and good feeling will spring up among men who constantly meet together, and who are taught by that association that their occupations and even their habits of thinking, though the latter may be varied by their different constitutions and tempers, are yet in a great measure alike. I do indeed earnestly wish that this, and other excellent institutions of the same nature, could teach us the simple truth that we are all one common brotherhood, so that any public injury, wantonly inflicted upon the character or reputation of a single member, is sure to be felt in a greater or less degree by the whole united body. We are, it must be allowed, very far from having attained to such a happy unanimity of feeling; but this society appears to be well adapted to promote so desirable an object.

It has been frequently remarked by those who have preceded me in my present honourable task, but it cannot be too often enforced upon our attention, that the society upon whose anniversary we meet to-day, is admirably calculated to soften our animosities by breaking down all artificial distinctions. It is so constituted, that incapacity and ignorance, whether found in those who are of high or in those who are of low degree, are sure to find their proper level; while the genuine talent and the deep research which are admired in the physician or the surgeon, are no less honoured when they shine with equal lustre in the general practitioner. What can it avail a man who has to maintain an argument among conflicting opinions—what clearness can it give to his reasoning, or what strength can it add to his position, that he is the Fellow of one College or the Licentiate of another?—all these adventitious circumstances are evidently of no use in arming him for the intellectual contest. And thus it must often happen that the physician is obliged to respect the knowledge and the talents of one who belongs to that class which perhaps but a short time since he secretly judged to be only qualified to compound the medicines which he himself prescribed—while on the other hand the apothecary, (if I may employ that designation which has almost become a *term of reproach*) is often compelled to acknowledge the truth of that which his jealous surmises may have led him to suspect, that the greatest talent and erudition are frequently found united with rank in the profession. By these means the prejudices on both sides are softened, and it is is to be hoped often entirely subdued; so that if it were for this good office alone, this society is well deserving our best regard and support.

But let me revert to an argument which I have before advanced. I maintain, that every British subject is entitled to equally efficient medical aid; the British dominions possessing no less than twenty-seven millions of persons, it is perfectly clear that the members of the College of Physicians are not equal to their relief: then, either the government must be grossly negligent of human life, or the members of the other colleges and halls are equally competent, and the distinction becomes absurd. I should regret that these observations should be thought offensive to any one; indeed I have so high an opinion of the good sense of the greater nnmber of the body to whom I allude, as to believe that they are willing to lend their aid in changing the present situation of the general practitioner, I do not believe that the *rvmuneration* of the general practitioner is complained of—it is simply that means are taken by false distinctions to lower him in the estimation of the public—thereby destroying, for the exaltation of others, that confidence in his capability which in the present state of his acquire-

ments he does not deserve. Thereby also, empiricism obtains one of its greatest aids, and patent medicines their tremendous consumption. Indeed I cannot forbear to say, that if we were less desirous of our own exaltation, and more willing to bear testimony to each other's competency, that quackery would feel a greater blow than it has ever yet sustained; as the prosperity of quacks and their medicines too often arises from the want of unanimity among ourselves.

ANEURISM OF THE RIGHT CAROTID AND ARTERIA INNOMINATA SUCCESSFULLY TREATED BY PLACING A LIGATURE ON THE CAROTID ARTERY.

By M. Morrison M.D., Buenos Ayres.*

[We have great pleasure in laying before our readers a case of aneurism of the innominata, treated according to the principle suggested by Mr. Wardrop, of only diminishing the circulation of the blood within the sac, by tying one of the branches of the diseased artery.]

On the 4th of November, 1832, was requested to visit Don José Hurruz, ætat 42, a native of Biscay, in Spain, a man of fine proportions and industrious habits. I found him in bed, to which he had been more or less confined during the preceding nine months, labouring under the following symptoms: pain in the cardial region, difficulty of breathing, which was increased to a painful degree by walking a distance of a few squares, rheumatism of the right shoulder, and of the muscles of the neck of the same side, hemicrania of the right side: in addition to all these, my patient had a large pulsating tumour, extending itself upwards from within the cavity of the thorax, and obliquely outwards behind the sternal extremity of the sterno-cleido mastoid muscle.

The tumour, when pressure was made of the carotid above it, did not diminish perceptibly, but the pulse at the wrist became fuller and stronger. When pressure was made on the right subclavian, the tumour pulsated more strongly, as likewise did the temporal and facial arteries of the right side; by reason of these phenomena, and the relations of the tumor, I concluded that it was an aneurism of the root of the right carotid and arteria innominata.

I stated to this poor fellow the danger of an aneurism in this region, assuring him at the same time that diseases of a similar nature had been cured in Europe and in North America, by surgical means. I gave him a faithful detail of the advantages and disadvantages of the operation, the possibility of death occurring as a consequence of it, and the prospect of cure in case it should not prove fatal. His reply was, that he would submit to any means by which a cure might be obtained. To mitigate his sufferings I bled him, and prescribed a dose of Epsom salts.

On the following Monday, in consultation, it was agreed that he had an aneurism of the arteria innominata and root of the right carotid.

On Thursday, the 8th, I operated in presence of Dr. J. M'Donnell and Don Mariano Brio, Surgeon-General. The operation was commenced by making an incision, extending from a point on a line, with the top of the larynx downwards, along the internal margin of the *sterno-cleido mastoid* muscle, as far as possible, without endangering the superior margin of the tumor. The dissection being continued, the *homo-lyoideus* was exposed, and the sheath which involves the primitive carotid and jugular vein laid bare. The patient now became pulseless, and to revive the powers of life a draught of undiluted wine was administered. Upon the recovery of the patient from this state, the sheath of the great vessels was raised with a dissecting forceps, and divided with a scalpel. An aneurismal needle, armed with a flat silk ligature, was passed under the artery, and the vessel secured by the ligature. The wound was brought together by the interrupted suture, dressed with adhesive straps, carefully bandaged, and the patient put to bed.

In the afternoon the patient complained of being much distressed by hollow sounds in the right side of his head; the pulsation in the tumor was tremendous, and by reason of communicating its motion to the shirt collar, the number of pulsations could be taken at some distance from the bed, the artery at the wrist being full and hard, and his skin hot and dry, I bled him to 16 ounces.

Friday, 9th.—The patient has passed a good night; pulse strong and frequent; tongue loaded with a white fur. I prescribed the saline mixture. At 6, P.M.,

* American Journal of the Medical Sciences. Philadelphia. 1837.

medicine had a good effect; patient had some sleep in the course of the day; pulse strong, and beating 110 in the minute; V. S. ℥ x.

Saturday, 10th.—Passed a restless night, suffers from pain in the right side of the head; pulse 100, and soft. The saline cathartic to be repeated.

11th.—The tumor pulsates strongly; some tenderness in the region of the wound; pulse 100; skin moist.

12th.—Dressed the wound, the greater part of which had healed by the first intention; pulse 98, and soft.

13th.—Pulse 94; wound doing well.

14th.—Pulse has risen to 108. V. S. ad ℥ viij., which produced fainting.

15th.—Pulse 100, and strong; twelve leeches applied to the region of the heart.

16th.—Digitalis and nitre were prescribed, but in consequence of the constitutional disturbance produced by their exhibition they were discontinued.

17th.—The tumor was tender to the touch. From this date the pulsation in the tumor became weaker, the tumor itself began to harden, and to diminish in size; the only symptom that afterwards required treatment was the rheumatic pain of the back of the neck and shoulder.

About the beginning of December the patient sat up to his meals; and on the 9th of the same month, being the thirty-second day from the operation, the ligature came away.

Hurruz, after his convalescence, went to one of the islands up the river, where he laboured hard at the making of charcoal. He came to this city from time to time, and when here invariably visited me, and I was happy to see him doing well. On his last visit, however, which was about the latter end of June, 1834, he complained of an oppression in the chest, which was accompanied with a slight cough, for the alleviation of which I had him cupped, and prescribed a mild emetic. This was the last time I saw Hurruz alive. On the 4th of July following, after walking a distance of twenty squares, upon his arriving at the very same house in which I operated upon him, one year and eight months before, he dropped down dead.

On the following day I examined the organs in his chest, in presence of Dr. M'Donnell.

Autopsy.—The sternum, together with the cartilages of the ribs, being raised, the right subclavian artery was traced to its source, at which point it was partially dilated. The *arteria innominata* was double its ordinary size, and studded with spiculæ of ossific matter.

The right carotid, from its origin to the point to which the ligature had been applied, was dilated into a sac, which was plugged up with a dense fibrous deposit. The portion of the tumour which was within the chest was much more voluminous than that which rose into the neck.

The anterior surface of the thoracic portion of the tumour was firmly adherent to the sternum. There never was a more splendid specimen than this, showing the manner in which nature cures this formidable disease, when assisted by art.

The lungs were free of adhesions, and of a healthy appearance; the heart itself presented nothing uncommon in its external aspect, but upon dissection it exhibited evident marks of inflammatory action, particularly in its ventricles; the semi-lunar valves at the origin of the *aorta*, were indurated from a deposit of ossific matter; the arch of the aorta was completely ossified, and considerably dilated. The pericardium contained from eight to ten ounces of serum.

EFFECTS OF SOLITARY CONFINEMENT ON THE HEALTH OF SOLDIERS IN HOT CLIMATES.

By Assistant Surgeon Malcolmson,

Late Secretary to the Madras Medical Board.

[*Letter to Sir H. Hardinge.*]

The author sets out with the confession that he is no advocate for *corporal* punishment, being satisfied that it is not effective in the prevention of military crime. Yet he cannot shut his eyes to the fact, that the anxiety to avoid the revolting spectacle of flogging is likely to lead to another kind of danger—the substitution of a solitary confinement that is incomparably more cruel at the time, and more detrimental to health afterwards. M. M. has reason to believe that "more real misery has arisen in 12 months from imprisonment in the jails of India, than has been inflicted by coporal punishment in a hundred years." Here our author adduces statistical reports showing that the mortality in prisons varied from 24 to 57 per cent. per annum! Punishment he acknowledges to be necessary, flogging disgraceful, and solitary confinement destructive of health; but

he is unable to suggest a substitute for either the one or the other mode. Mr. Brown has a doctrine which, if taken in an unrestricted sense, is rather startling. "There can be no doubt of the truth of the principle, that *no punishment* can be just, or in the eye of God, lawful, which tends to impair the efficiency, injure the health, and shorten the life of the soldier —or which produces any effects that cannot be estimated by the judges when they assign a punishment for an offence." A soldier mutinies, and he demurs to any punishment that may injure his health or shorten his life! Greenacre and Meunier might have urged this doctrine against their sentence, as tending to injure health and shorten life! Johnson defines "punishment" as the infliction of pain or death, as atonement for crime. No infliction of this kind, to be of the least efficient amount, can be otherwise than injurious to health, in a greater or less degree. Nor can the judge always predicate or calculate the effects of corporal punishment.—What may be borne with impunity by one man, may be the death of another. Daily experience shows that the judge or the court-martial cannot estimate the amount of punishment which a man can bear, otherwise a surgeon would not be ordered to attend the infliction of the sentence, and arrest the whip when he finds the culprit sinking under its effects.

By these observations we do not mean to advocate solitary confinement and bread and water, as punishments for soldiers in the East Indies, as the injury may be more than was designed, and consequently more than is proper. But we maintain that all punishments are more or less injurious to physical health, and that flogging is a punishment much more detrimental to the moral man than solitary confinement. In the former case, the man feels degraded, and too often loses all desire to retrieve his character. In the latter, he is not exhibited in public, and has ample time for reflection and repentance in his lonely cell, where his messmates cannot pamper him with intoxicating draughts. But we advocate seclusion, we condemn starvation on bread and water. We would mortify the spirit, but not withdraw proper sustenance from the body. If the great object of punishment be the prevention of crime, we know, from observation, that the dark cell is more dreadee than the whip. This we saw exemplified among the French prisoners during the last war. Nothing was so operative in preventing crime as the dread of the CACHOT.

Our author's attention was first drawn to the effects of this kind of punishment by two men who were so treated at Hyderabad. These effects resembled a good deal those of sea scurvy. The history of the Penitentiary Endemic, by Dr. Latham, also exemplifies these effects.

"Many men, particularly those of indolent habits, endure a confinement of four or six weeks, on bread and water, without injury to their health; but, in some instances, a shorter period is sufficient to cause a total loss of appetite,—the bread is hardly touched, and on other food being allowed, the patient is unable to eat or to digest it. The stomach becomes weak; there is uneasiness across the region of the stomach, spleen, and liver; the latter is torpid; the bowels are confined, or they are relaxed with slimy discharges unaccompanied with pain, yet the swollen red tongue indicates the existence of irritation of the mucous membrane of the digestive canal. The pulse is quick and feeble, and the clammy skin, vertigo, debility, headach, and sleeplessness, show how much the constitution suffers from diminished nervous power. The convalescence is slow, and the treatment requires to be adapted to the enfeebled state of the system. The effect is, however, more clearly seen in men sentenced to six or twelve months solitary confinement. Two of these were in hospital at the same time, with decided symptoms of scurvy:—one was admitted after five months confinement, during part of which he had been allowed extra diet at my recommendation. It was observed that for some time previous to his removal to hospital his daily allowance of bread was removed almost untouched. He complained of pains of the limbs, along the spine, and across the loins; tenderness of the shin bones; hardness, pain and feeling of stiffness of the calves of the legs, and the skin over the painful muscles was of a dark livid colour from effused blood. The gums were spongy, livid, and retracted, and he suffered from sleeplessness, some pain of the region of the liver, and slight griping. The tongue was yellow and its edges red. The other had been a shorter time in confinement, and complained of debility, disorder of the bowels, pains of the shin bones, &c.'

"We wonder indeed how any rational people could think of sentencing soldiers to six or twelve months' confinement on bread and water! The plan must prove

ruinous to the constitutions of nine-tenths of the miserable victims of a mistaken and too rigorous system of retaliation for crimes not capital."—*Medico-Chirurgical Review.*

PROFESSOR LALLEMAND ON SPERMATORRHEA.

The distinguished Professor of Montpelier has recently published a treatise on involuntary seminal emissions, in which he has minutely described the symptoms, most frequent causes, the pathology, and the treatment of this most insidious and offensive disease. He states:—

"In the course of the last fourteen years I have collected upwards of 1500 cases of involuntary spermatorrhea, in all of which the health was seriously affected, and in many death was the consequence. The greater number of the patients had been directed to me *for supposed cerebral affections*. In not a few of the cases, it had been supposed that the patient suffered from chronic gastritis, or gastro-enteritis, from aneurism of the heart, from incipient phthisis, or from some of the multifarious forms of nervous disturbance, and most frequently from hypochondriasis."

The cases, adduced by M. Lallemand, exhibit examples of persons, whose constitutions had been vigorous and robust, presenting at the period of life when the body has acquired its development, and without any appreciable cause, all the symptoms of physical exhaustion, associated with a very marked feebleness of the mental powers.

In examining attentively the probable cause of this premature decrepitude, it was frequently discovered in an existing spermatorrhea, or seminal weakness. The opinion of the author, who recognizes in a protracted spermatorrhea the cause of numerous encephalic distresses, is confirmed by the consideration that, in some fatal cases where cerebral congestion, the decay or perversion of the intellectual faculties, the exhaustion of the physical energies, &c., have existed for a length of time, no signs of morbid change, except in the genito-urinary organs, are discoverable on dissection. The most frequent and the most potent cause of spermatorrhea is, according to Lallemand, an inflammation affecting the secretory and excretory apparatus of the semen—an inflammation which, commencing in the urethra and prostate gland, is apt to extend to the vasa efferentia, vesiculæ seminales, vasa deferentia and testicle, as well as to the urinary bladder.—*Ibid.*

THE MISCHIEF OF THEATRICAL SURGERY.

To the Editors of the London Medical and Surgical Journal.

Gentlemen—In perusing the valuable pages of your Journal, I was much struck with the fearless manner and humane view which you have taken of the "*theatrical performances*" of some of the metropolitan pures, and in a a particular manner with your remarks of the unprincipled conduct of certain hireling journals, in concealing from the profession the true result of the practice of the London Surgeons. In justice, however, to the candour of an able contemporary, I was much struck with the bold and manly sentiments contained in the following paragraph.

"It is very creditable to surgeons and to science, that much less consideration is now attached to operations than was formerly the case, and that men of great ability and talent for investigation, have applied themselves to what is known in common language as 'medical surgery,' rather than to the acquisition of mere mechanical dexterity." The latter is no doubt a useful and showy accomplishment, but whoever has witnessed the performance of a sow-gelder, or the bloody legerdemain of the shambles, must admit that it is possessed in the utmost perfection by the lowest, the most brutal, and the most ignorant of men.

We cannot conceive anything more revolting to the mind of a man of intelligence and humanity, than the reflection that he is regarded as a sort of human butcher, whose *hand* and not whose *head* is called into requisition, and who like an *executioner* is only wanted when there is *bloody* business to be done. Such a man must feel how cheap he deserves to be held in the world of intelligence and science, and he must own, with humiliation, that he is little better than a handicraft mechanic.

The history of lithotomy and hernia is sufficient evidence of the extent to which mere operative skill may be carried,

amidst the grossest ignorance of all that should regulate the performance of operations."

Should you think proper to insert the above extract from Dr. Johnson's last number of his Review, I presume to think it may still further be the means of giving publicity to professional sentiments which must be valuable indeed, not only to the student, but even to more advanced practitioners.

Believe me your constant reader and well-wisher,

M. R. C. S.

Greenwich, August 1, 1837.

CHARING-CROSS HOSPITAL.

To the Editor of the London Medical and Surgical Journal.

Sir,—I read with much pleasure the just observations you made last week in your independent journal, respecting the Charing-Cross Hospital, and I must say that it appears to me very strange that other journals have not taken notice of the infamous jobbing which has been carried on there by some interested individuals for the last few years

The praise you have given to Mr. Partridge that gentleman well deserves, and I have now to assure you that Mr. Partridge is using his best and honest endeavours to effect a junction between the King's College and the Hospital, without which union the latter institution will continue to remain a dark and foul spot in the annals of our charitable institutions. Mr. Partridge, as well as ourselves, sees the obstacles which are hourly cast in the way of even rendering our hospital a proper place for clinical instruction; and I have reason to know that changes, which the Director and his satellites do not anticipate, will ere long be effected in the institution, through the powerful influence of many governors now obliged to be out of town, and who fully concur in the views and objects of Mr. Partridge.

I have the honour to be, Sir,
Your constant reader,
A Pupil of the Charing-Cross Hospital.

REVIEWS.

On a New Mode of Treatment employed in the Cure of various forms of Ulcer and Granulating Wounds. By Fred. C. Skey, F.R.S., Assistant Surgeon to St. Bartholomew's Hospital, Lecturer on Surgery at the Aldersgate School of Medicine, &c. London: Longman and Co. 8vo. pp. 85. 1837.

On perusing the preface of the small pamphlet before us we were led to expect that something of a novel and very extraordinary kind was about to be introduced to our notice in the eighty-five pages appended to it. The very ingenious and artful manner in which the "proposed remedy" is mysteriously spoken of; "*it* is to invariably supersede *all* operations in the treatment of non-specific ulcers;" the "unqualified belief" the writer has "in *it* as a remedy;" "*it* claims a trial," &c., raised our expectations to the highest pitch; but great was our disappointment, after anxiously wading through thirty pages, to find that "IT" was neither more nor less than our esteemed friend and ancient ally OPIUM! What could have induced our author to have made so many apologies and such a fuss in his four pages of preface about little or nothing is but known to himself. However, as these "*parturiunt montes*" offer in originality much more for contemplation than the "*ridiculus mus*" which follows, we propose first to pay particular attention to the "lady in the straw," and, as is usual in cases of this kind, having secured her a safe delivery, next to look after the offspring.

In the first paragraph of his preface Mr. Skey premises that "in proffering the results of an extended experience honestly recorded," it his not his desire "to supersede the labours of many eminent predecessors." The modest, though indirect assumption of the term "eminent" in this sentence is very characteristic, and it only required the addition of *other* to make it fully intelligible to the most careless reader; neither was there the slightest necessity of adding "honestly recorded," as there will be found nothing extraordinary or wonderful in the cases related, to raise the slightest doubt of the *honesty* of their detail. But let us see how far "the desire not to supersede the labours of others" is complied with, at pages 7 and 8 of the offspring. In discussing the old question, "why ulcers of the legs predominate in os

large a degree over every other part of the body?" The opinions of Mr. Underwood, Mr. B. Bell, and Mr. Whately, are "deemed unphysiological" in referring their prevalence in these situations to the weight of the lengthened column of blood in the veins, without any satisfactory reason for the author's differing in opinion being given, and Sir E. Home's *honesty* is particularly pointed at in the following: "Sir E. Home speaks of this (obliteration of the saphena vein by operation) his favourite mode of treating ulcers, conpled with varcose veins, as an operation of frequent performance; yet, out of the whole catalogue of cases, he does not refer to a single example in which the operation was attended with bad consequences. This is somewhat remarkable!" Not, however, a bit more remarkable than the sixteen successful cases which our author relates, and which do not form a "detail of even a tenth part of those to which the treatment has been applied!" Next comes Mr. Baynton's practice, the "general efficacy" of which is admitted, but who is complimented with confounding "*ulceration* with *cicatrisation*," and quotations are made from this gentleman's pamphlet, published in the year 1799, to give Mr. Skey an opportunity of confessing that "all this borders on the mysterious," and that all Mr. Baynton's "reasoning is unphysiolo gical and unsound. So much for the "desire not to supersede."

"Had I been actuated," says our author, "by any other motive than that of communicating to my professional brethren, and through them to the public, an efficient means of curing an obnoxious and often loathsome disease, I should have selected for my subject one more aristocratic in the circle of its influence, and necessarily more profitable in its treatment." Now truly "all this borders on the mysterious," and appears to us quite unnecessary after Mr. Skey having at the very outset assured his readers that his views were "the results of an extended experience, honestly recorded." We must, however. remind our author, who has evidently paid much attention to this subject, that not only are a fair proportion of the aristocracy sufferers from the disease, but that also a far better feeing class of patients, those whose various callings subject them to the inconveniences of city life, present innumerable *interesting* specimens of most varieties of ulcer. Such, for instance, as the foreman in the large distillery visited by Mr. Skey at the request of Mr. Goss, the progress of whose cure is so accurately noted; and the case of Mrs. S., with the "superficial erratic ulcers."

With respect to the pamphlet itself it may have a tendency to make opium-eaters of a few hypochondrical ulcer-eaten individuals, and this is all; for as far as the profession is concerned the efficacy of opium as a remedial agent in the treatment of ulcers must, at this time of day, be fully appreciated by every practitioner, else the writings and discourses of Bell, Underwood, Baynton, Pott, Home, Cooper, Wardrop, Brodie, &c., have been undertaken or delivered in vain.

We shall conclude ihis lengthened notice of a short pamphlet with an analysis of a few of the cases, so that a fair estimate can be formed of the merit due to opium as "the specific," when the treatment with which its administration was conjoined is taken into account.

Case 1.—A labourer, aged 54, *admitted into hospital*, with a deep excavated ulcer of the leg, which was covered with rags, saturated with an aqueous, and apparently acrid, discharge. He suffered *little pain* in the ulcer, except *after exercise.—Treatment:—Rest, mild aperients, bread and water poultice, spermaceti dressing*, and extract of opium half a grain night and morning increased to three-quarters of a grain. After five weeks the ulcer was diminished to one-third its original size, and had the appearance of a recent ulcer.

Case 2.—A mechanic, aged 42, *admitted into hospital;* an enormous ulcer on each leg; action rapid, and surfaces covered by a foul fœtid slough; superficial veins varicose. He exhibited the aspect of *perfect wretchedness*, and was abstinent of drink. *Treatment: Rest, a bread and water poultice, three per diem; chloride of soda lotion; meat diet; porter;* fifteen minims of tincture of opium night and morning, increased to twenty-five minims. In hospital from the 22nd of September to the 29th of November, and went out cured by opium.

Case 3.—Mrs. S., aged 50, an ulcer on left leg of a superficial erratic kind, combined with varix, ulcer of two years standing; had worn a laced stocking for many months; pulse low: subject to cold feet, but in other respects healthy.—*Treatment: A light roller for the laced stocking; simple dressing; electuary of senna* if bowels were constipated, and *horizontal position during the greater part of the day*, and ten drops of tincture

of opium thrice a day. Sore healed in fifteen days.

Case 4.—"*The most remarkable I have witnessed.*" "Aged 59, suffered from the presence of an open wound in the leg for fifteen years; discards all local treatment; takes half a grain of opium twice a day for twenty-eight days. The sore heals; and, at the present date, five months after treatment I find the cicatrix still firm," &c. "He continues to wear a loose roller."

In this case it appears not to be taken into account that "all local treatment" was "*suspended;*" that the wound was "*lightly dressed during the day* with *simple dressing*, and *poulticed* with *bread and water* at night;" that he "*resumed* his *gin*," and that he continues to wear a loose roller."

With this, "*the most remarkable*" case, we stop.

The Royal Society in the Nineteenth Century; being a Statistical Summary of its Labours during the last Thirty-five Years. With many original Tables and Official Documents, (never before published,) shewing the Constitution of the Society, the Character of its Fellows, its various Proceedings, and Pecuniary Expenditure for "Improving Natural Knowledge," and a Plan for its Reform. To which are added, Alphabetical and Seniority Lists of the Fellows since the Year 1800. (Arranged purposely for this occasion.) By A. B. Granville, M.D., F.R.A.S., F.G.S., M.R.I., &c., one of the Contributors to the Philosophical Transactions, and for the last Eighteen Years Fellow of the Society. London: Churchill, Gerrard Street. pp. 253. 1836.

We lay the following interesting extracts from this volume before our readers, and shall, in a subsequent number, enter more fully into the *real* benefits the Royal Society has conferred upon Science in this country, more particularly as relates to the medical profession; when we promise to "unfold a tale," which will make many of its members start!

"Of the 79 doctors in physic, who are at present Fellows of the Royal Society, it would appear then that only 23 have contributed to the Philosophical Transactions, and of this number 10 only are resident in the metropolis, the other 13 Fellows being constant sojourners in the country. The papers which these 10 metropolitan physicians have produced, out of the total of 66 above quoted, and which have been published, are 23 in number. The rest have been communicated by the 13 provincial physicians constituting, with the former 10, the total of *efficient* Fellows of the Royal Society whose profession is medicine. Here then is a glaring example of the indifference with which almost any claimant is suffered to enter the society. The mischief which is produced by such a practice is manifested in the apathy of the really scientific men, who cease to take any interest in the welfare of an association of individuals so constituted. A certain quantity of scientific knowledge, observes Mr. Babbage, is of course possessed by many individuals in many professions, and to that of medicine a knowledge of chemistry, and of some branches of natural history, and indeed of several other departdepartments of science, affords useful assistance; but it is obvious that this quantum of knowledge may become, when separated from the profession, quite insignificant as the basis of scientific reputation. If this be true, and who can doubt it, then the indiscriminate practice of raising physicians by the dozen to the dignity of members of a society for which the chief qualification ought to be scientific reputation, independent of professional character—in spite of the known fact, that such physicians have not the smallest pretension to pure scientific knowledge beyond what forms the common elements of the profession which gives them bread—may be justly considered as one of the causes of the decline of the Royal Society. Still more injurious must such a practice prove, when physicians, who have never offered to contribute the smallest particle of scientific information to the society, or to the world at large, are allowed to present themselves as candidates for an honour which they have not deserved—for which they do not even urge any plausible pretension—and when it is manifest to the whole society that such candidates cannot prove either "useful" or "valuable members thereof."

"Of the fellows and licentiates of the Royal College of Physicians in London there are 226 who actually practise in the metropolis, and 10 only of that number have given proof of cultivating science for its sake, and even they, with two or three exceptions, have not acquired a purely scientific reputation by their labours. See then how trifling is the measure of

scientific merit in the medical profession; yet, through the prevailing absurd practice of relying, as to the reality of the claims of candidates, upon a mere certificate, which, it has been proved, may be obtained by any one and at any time, not fewer than 66 out of the 226 physicians practising in London who have been placed on the same rank as F.R.S. with individuals who have far other claims to the dignified appellation of scientific men. The whole concern, in good truth, is a complete farce; and my astonishment is, that when such elections take place the electors do not burst out in roars of merriment at the solemnity with which the secret votes are collected in behalf of a candidate whose whole tenor of life is in overt contradiction with the professions and descriptions read aloud, and with due pomp, by one of the secretaries.

"The number of surgeons who are to be found on the list of the Royal Society is a curious contrast to that of the physicians in many respects—it is smaller by 48—it contains only one member who is not resident in the metropolis—has produced more than double the number of scientific communications to the Philosophical Transactions—and boasts of not fewer than 15 hospital surgeons, most of whom are in the first practice, and have acquired a high character, both in England and on the continent, for their scientific attainments. But how is it, that while M.D.'s crowd upon the list of the Royal Society, the M.C.S.'s are like 'rari nantes' in that overswelling ocean of F.R.S.'s? Why do we not see figure by the side of this small band of metropolitan surgeons in our society a few of the truly eminent surgeons of provincial hospitals? Those can best answer these interrogatories who have managed our affairs since the beginning of the present century, and none better than the 'noisy ones.'

"After such a picture of the medico-chirurgical section of our list, who can abstain from suggesting to the society the propriety of putting a stop, for the present, to the election of doctors of physic, except under circumstances of the most manifest eminence for science in the candidate? This will gradually restore to the initials of F.R.S., when accorded to a physician, the dignity and value they have lost; while, with a view to maintain intact the existing respectability of our fellows who are surgeons, it should be resolved that none other shall be ballotted for who has not distinguished himself for extraordinary operations, or brilliant and useful literary or scientific productions, whether resident in town or in the country. Woe to the present 21 surgeons, if they from supineness suffer any candidate to be added to their number whose claim to that distinction is far different from their own; —and still more, woe to their character, if such unworthy additions be made hereafter through the influence of their own names inconsiderately tacked to certificates for ballot."

TO CORRESPONDENTS.

B. C. B.—Though Sir Benjamin bestirred himself in the *last* Charing Cross election, and in a way not much to his credit; but we believe that the worthy baronet will be afraid of tarnishing his fingers with a new *Recognition*.

M. R C. S.—His communication will be always thankfully received.

Morbus Pedicularis.—The patient had better apply to a Skin Infirmary. The Ormond-street, Cutaneous institution was transferred a few months ago to Blenheim-street.

Gammon.—His observations are better calculated for the Anthropological Journal. Except their belonging to the class mammalia, there is no analogy between a pig and the human species.

A Country Student.—Mr. Liston will not deliver a course of his lumiuous lectures at Sydenham College; that classical seminary being within the prescribed boundary. The University Hospital College Lion is daily exhibiting more and more interest in the fate of both Professors Wilson and Dalrymple.

*** The Director disclaims all relationship with the butcher—the propinquity is however established.

A King's College Student.—We believe that some of the abuses complained of have been already remedied by the manly interference of Mr. Partridge.

Reflector.—The Fullerian professorship of Physiology at the Royal Institution is not finally arranged. The numerous courses in the different schools which the great Professor Sydenham has undertaken to deliver, convince us that the rumour of his accepting the chair, is unfounded.

All communications and works for review to be forwarded, (carriage paid) to Dr. Ryan, 4, Charlotte-street, Bloomsbury-square.

THE

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LECTURES ON DISEASES OF THE SKIN,

Annually delivered in Paris,

By M. Biett,

Reported by MM. Cazenave and Schedel.

——

M. Biett is the colleague of our esteemed correspondent, Baron Alibert, whose valuable lectures appeared in this journal a short time since. A large auditory attends the clinical lectures of M. Biett, which are delivered every year at the hospital St. Louis, and these discourses have been taken down by two of his most distinguished pupils, MM. Cazenave and Schedel.

The classification adopted is Willan's, with some modification. This is the most simple and correct. It excludes all doubtful terms, as dartre, teigne, &c., which are often applied to the most opposite diseases. After free strictures on the classifications of preceding writers, M. Biett offers one of his own, which he thinks most correct, and is based on Willan's, which embraces all elementary lesions, independently of the products of inflammation. These form eight distinct classes: 1. Papulæ; 2. Squamæ; 3 Exanthemata; 4. Bullæ; 5. Vesiculæ; 6. Pustulæ; 7. Tubercula; 8. Maculæ.

This arrangement is liable to objections, for we find purpura in the exanthemata, erysipelas in the bullæ, itch in the pustules, acne and sycosis menti in the tubercules, &c. Moreover there are many cutaneous diseases, which cannot be referred to any of the genera of Willan, as we shall see immediately. M. Biett and his followers class diseases of the skin according to their external appearances, and forms—

Order I. Exanthemata, which includes, erythema, erysipelas, roseola, rubeola, scarlatina, and urticaria.

Order II. Vesiculæ, as miliaria, varicella, eczema, herpes, and psora.

Order III. Bullæ, as pemphigus and rupia.

Order IV. Pustulæ, as variola, vaccina, impetigo, acne, sycosis menti, and porrigo.

Order V. Papulæ, lichen, prurigo.

Order VI. Squamæ, lepra, psoriasis, pytiriosis, ichthyosis.

Order VII. Turercula, elephantiasis of the Greeks, molluscum, frabœsia.

Order VIII. Maculæ, colorations, bronze tint, spilus, nævi, declorations, albinism, vitiligo.

The following diseases do not belong to any of the preceding orders:—

Order IX. Lupus.

Order X. Pellagra.

Order XI. Syphilides.

Order XII. Purpura.

Order XIII. Elephantiasis of the Arabians.

Order XIV. Chelodea, or keloide.

These elementary lesions are constant for all the eruptions of each order:—

Exanthemata; spots more or less red, of divers forms, more or less extended, disappearing under the pressure of the finger, terminating by delitescence, resolution, or desquamation.

Vesiculæ; small blisters or elevations of the cuticle, formed by a collection of a serous and transparent fluid, which, under some circumstances, may become opaque, or even sero-purulent. Absorption of the effused fluid, slight desquamation, excoriations or small fine crusts may succeed vesicles.

Bullæ; blebs. These differ from the last only in being much larger, and a small superficial tumour, formed by the effused serosity under the cuticle.

Pustulæ, are purulent collections formed on the surface of inflamed mucous tis

sue. The fluid they contain gives rise to incrustations of more or less thickness, and these leave chronic indurations, or inflamed or exuriated surfaces.

Papulæ; small, hard, solid, and resistent elevations, never containing any fluid, susceptible of ulceration on their summit only, but terminating most commonly by resolution, or a furfuraceous desquamation.

Squamæ; this term is applied to the scales of the epiderm or cuticle when altered, most commonly thickened, dry, whitish, and friable, which surmount small elevations, like papulæ, which are more or less red or inflamed. These are susceptible of being detached, and of being reproduced for an indefinite time by successive desquamations.

Tubercula; tubercles are small hard tumours, more or less prominent, circumscribed, and permanent, partially ulcerated, or which may suppurate at their summit. In cutaneous pathology they are considered as elementary lesions, and as not having been preceded by any purulent collection.

Maculæ; spots are permanent colorations or decolorations of certain points of the skin or of the whole of this tissue, which, are unconnected with any constitutional disturbance.

Most of the diseases of the skin are referrible to these eight orders, so grouped and presenting close analogies between each other. We make some changes in the classification of the species. Thus, pemphigus and pompholix appear to us to be one and the same disease. Acne is evidently not a tuberculous disease, erysipelas evidently belongs to the exanthemata, itch to the vesicles, &c.

The diseases in the last six orders cannot be referred to any of the preceding, as they develope with special symptoms. There are also other diseases excluded, as anthrax, burns, &c., which properly belong to general surgery, and whose descriptions would lead to serious digressions in lectures, though necessary in systematic works.

The special symptoms of diseases of the skin are very much complicated with each other, and many different elementary diseases are frequently met with on the same individual, especially those of an acute kind. They are also often accompanied by constitutional disturbance, by more or less irritation in the mucous membrane of the respiratory and digestive organs. But there is a great number of eruptions of a chronic kind, which continue for months or years, without being complicated with any constitutional irritation, and without the least internal derangement. Cutaneous diseases are susceptible of great modifications in their progress, coloration, and termination, according to constitution, age, hygienic conditions, and complication with internal inflammation. Thus we often observe a chronic cutaneous disease which has continued for months, disappear during the presence of an accidental gastro-intestinal irritation, and gradually return during convalescence. We may therefore say that the eruption is conveyed to important organs. Nevertheless the internal inflammation had preceded the disappearance of the eruption; the return of the latter was gradual when the inflamed organs return to their normal or healthful condition. These cases are, however, of rare occurrence.

Diseases of the skin are developed under very different circumstances, so that their etiology is not the least obscure part of their history.

Some of them appear from direct causes, as from stimulant applications in certain professions, certain hygienic conditions, &c. Thus we often observe a vesiculous or vesiculo-pustulous eruption appear after vesicatories, frictions, and irritant lotions, after the application of irritating powders, or when the part has been exposed to great heat. Exanthematous complaints are often suddenly excited by the application of irritant substances to the skin, and prurigo often appears from the same causes. But there are many other eruptions which appear without the influence of any external cause, from some derangement in the economy, with alteration of some internal organ. Thus chronic pemphigus declares itself in old age, in poverty, and every kind of privation; erythema and purpura often occur in plethoric persons, or when the menstruation is deranged; roseola and urticaria often accompany or supervene on fevers, and many others are excited, as in children, and even adults, by gastro-intestinal irritation. There are, however, many cutaneous diseases unconnected with enfeebled digestion, or even bad health, when no causes can be assigned for them.

Again, many diseases of the skin are hereditary, and there are individuals in whom they are frequently renewed at certain periods or seasons, on the slightest change of regimen, the least excess of any kind, and on any moral emotion.

In fine, there are certain eruptions con-

tagious, as the itch, porrigo, &c., variola, syphilis, &c.; others are induced by climate, as the elephantiasis of the Greeks, frambœsia, molluscum, &c. As to the causes of the difference in appearence of eruptions, as the vesicular, pustular, &c.. they are as yet unknown, and must remain so until the ultimate structure of the skin is better understood.

The differential diagnosis of diseases of the skin requires great attention and study, for it is not sufficient to say this is itch, that is syphilis, &c., as is too commonly the case. It is a point of the greatest importance to form an accurate diagnosis. The following method enables us to determine the nature of a disease:—

We should study the elementary lesions, and determine whether a certain eruption is papulous, vesciculous, squamous, &c ; and this is in general easily done by a slight inspection, and if the primitive lesion is observed, it is easy to determine the form, seat, progress, &c. Thus, for example, if a patient presents on the internal surface of his arm, in the spaces between his fingers, on his wrists, groins, &c., distinct, accuminated, transparent, small serous collections, accompanied by pruritus or excessive itching, it will be at once seen that the fluid is not pus, that there is no solid resistent elevation, a circumscribed elevation, a redness disappearing on the pressure of the finger, in a word, that it is not a pustule, a papula, a tubercle, a squamous disc, an exanthematous spot, or patch, but a *vesicle*. We can now readily decide what disease it really is. It is not, for instance, miliaria or varicella, for these are accompanied by general phenomena; in the one the vesicles are globular and innumerable, in the other they are larger and inflamed; the disease is not herpes, for this is characterised by a re-union of the vesicles in groups, while here they are distinct and scattered. The only other diseases of this species with which it can be confounded are *eczema* and the *itch;* the vesicles of eczema are flattened, those under consideration are accuminated; they are more or less agglomerated in great number in eczema, here they are distinct, &c.—then the disease is the itch.

There is little difficulty in diagnosticating, on the first appearance of cutaneous eruptions; but this is not the case when the primitive elementary lesion is masked by consecutive alterations; and even the itch, which is usually easily known, may be so modified in appearance by the action of the nails, that it is rendered very obscure, and by no means readily determined until we refer to its particular history, when we can speedily discern the real nature of the disease. We must study the primitive and consecutive appearances of any cutaneous disease; and these will be found in the history of each malady. Thus the fluid of a vesicle may become thick and form a small scale, a pustule forms a scab or crust, and this may leave an ulceration; so that it is important to know the particular characters of the consecutive phenomena, and more particularly to what elementary lesions they correspond.

To form a correct diagnosis it will be necessary to decide on the nature of the consecutive lesion, and to what primary disease it belongs. Before we can arrive at a correct conclusion it must be manifest that we should be well acquainted with the primary and consecutive appearances of each disease, so that however complicated we may recognize them. The characters are sometimes so slight that the diagnosis is extremely difficult. We can always distinguish the febrile from the non-febrile, and generally the different forms of eruption. There are cases, however, which puzzle the ablest observers. Certain eruptions pass from their primitive forms very rapidly; and it is therefore most important to study them in their first appearance, which may be done by referring to any standard work upon the subject.

The treatment of cutaneous diseases is still too empirical.. This was to be fairly expected from the inattention paid to dermophysilogy and pathology. Here we cannot say "a knowledge of the disease is half the cure." The nature and causes of cutaneous diseases being little understood, it is clear to any medical practitioner that the treatment must too often be empirical and erroneous. Tonics, sulphurous preparations, mercury, antimony, sarsaparilla, Plummer's pill, &c., were the great remedies. But it often happened that these were either ineffectual or useless. The treatment must vary according as the disease is acute, or chronic, or febrile, or not. It must be local or general. that is, it embraces internal and external applications. Some cutaneous diseases are cured by internal remedies, and others only by external applications.

Among the general means are blood-letting, which may be effectual in abating fever and internal inflammation, while leeching may be necessary to fulfil the same indication, or to relieve inflamma-

tion about the eruption. Venesection is also beneficial in plethoric habits before the local treatment is commenced.

Purgatives are also valuable, and after some time they may be given in small doses, as if to act as alteratives.

Acids, alkalies, bitters, sudorifics, as antimony, sulphur, guaiacum, &c., are often employed with advantage.

In obstinate cases, which have defied all ordinary means for months or years, we find tincture of lytta and arsenic the most effectual remedies, but they must be administered with caution. When used with care they effect a cure of the most obstinate cases, and without producing any bad effects upon the constitution. They are freely exhibited at the hospital St. Louis with the best effects, and patients have returned, after the lapse of years, whose constitutions are by no means impaired. Nevertheless a free and long use of arsenic undermines the health and acts as a slow and certain poison, a fact attested by every toxicologist and medical jurist. The preparations of iodine are also valuable remedies, as well as sarsa, guaiacum, &c.

The local treatment consists in determining a vivid excitation in the affected parts, and among the various ointments employed those composed of iodine, mercury, and sulphur are the best.

In other cases the direct application of blisters to the diseased surface, to modify or change the vitality of the part, will be found beneficial.

In some diseases it becomes essential to alter the state of the affected part, or to limit the ravages of a disease which tends to destruction; and this is best accomplished by the arsenical paste, the nitric acid of mercury, the chloride of zinc, &c.

Among the local means various baths are most efficacious, and as many as 150,000 are used annually at the hospital St. Louis. These included local, general, vapour, douche, and all kinds of baths in use. These are given to the poor, who apply at the dispensary of the hospital, and the annual number of applicants of this class is 25,000 persons.

Exanthemata.

The term exanthemata is derived from ἐξανθημα, ἐξανθέω, effloresco, and applied to acute inflammation of the skin, characterised by more or less redness, which instantaneously disappears under the pressure of the finger, and is usually accompanied by febrile symptoms.

Erythema, erysipelas, roseola, rubeola, scarlatina, and urticaria present these characters.

Symptoms. All the points of the surface of the skin may be affected, but some exanthemata develope themselves more frequently on the whole body at once, whilst others are limited to a greater or less extent. The special seat of the diseases is in the superficial layers of the derm or skin, and sometimes the whole tissue is involved in the inflammation.

The progress of the exanthemata is generally acute and continued, with the exception that sometimes urticaria, erythema, and even erysipelas, are chronic and intermittent. Their duration varies from one to three weeks. Urticaria may, however, persist for months or even years.

Irregular shiverings, spontaneous lassitude, a fever more or less intense, thirst, and nausea, are the usual precursors of this class of diseases; but each exanthema presents peculiar symptoms. Thus the redness is more or less diffused or circumscribed, irregular, or assuming a certain form. Redness, heat, tumefaction, and pain accompany erysipelas, whilst urticaria is remarkable for vivid itching. In the progress of the exanthemata it is often complicated with inflammation of some internal organ, and especially of the brain, and the pulmonary and gastro-intestinal mucous membranes. The fatal termination of these diseases almost always depends upon these complications.

Resolution, desquamation, and delitescence are the most common terminations of these diseases, but they may end in death. Suppuration and gangrene are sometimes consequent on erysipelas.

Necropsy.—The examination of the bodies of those who die of exanthemata often give very unsatisfactory results—a sanguine congestion more or less intense in different organs is the lesion most frequently observed, and sometimes we find evident traces of inflammation.

Causes.—Measles and scarlatina are developed by a contagious principle, the nature of which is entirely unknown, and which seldom attacks the same individual more than once. The causes of the other diseases of this class may be direct, but they depend, in general, on a particular disposition of the economy, very difficult to appreciate. Without affecting in any way their reciprocal influence, they constantly co-exist with inflammations of internal organs. Erythema was epidemic in Paris in 1829.

Diagnosis.—The distinctive character

assigned to exanthemata prevents them from being confounded with any other cutaneous affection, and enables us to distinguish them from purpura and ecchymosis, in which the pressure of the finger never obliterates the coloration. The red tint which characterises exanthemata does not exist in the negro, in whose case the black tint is most intense.

Various papulous, vesiculous, and bullous eruptions may be confounded with the exanthemata, and the frequency of these complications with erysipelas led Willan to place this last disease among the bullæ.

Prognosis.—The prognosis varies according to the seat and extent of the inflammation, the age and constitution of the patient, and according to the severity of the concomitant disease.

Treatment.—The treatment of exanthematous inflammation ought to be antiphlogistic, more especially when any internal organ is congested or inflamed. We should not hesitate to have recourse to sanguine emissions, both general and local, in proportion to the intensity of the disease.

The convalescence of some of the exanthemata is often tedious, and may be complicated with other diseases, as hooping cough, chronic cough, anasarca, chronic diarrhœa, &c., which will require proper treatment long after the disappearance of the cutaneous inflammation.

LECTURES ON SURGERY.

By John Hunter, F.R.S.

Diseases peculiar to Ages.

Particular ages have their particular diseases. These diseases peculiar to age are perhaps more of the specific than of the common kind; and age is little more than a natural or remote cause, there being some immediate cause acting so as to produce the disease, as in scrofula. But this is not the case with all of them, e. g. cancer, for this appears often to arise without any peculiar immediate cause. How far particular ages are more or less susceptible of particular poisons we do not know.

The age of man is divided into three parts: 1st, The age of growth; 2nd, The stationary age; 3rd, The age of decline. The first and last are absolute, but the second is not so easily ascertained, it not being very easy to say where the first ends and the last begins. The young subject and old are more susceptible of many diseases than the full-grown, or stationary, but they are not subject to the same diseases. The young are more susceptible of sympathy, both universal and local; more susceptible of scrofula than the middle-aged, but particularly more than the old; and this scrofula may produce consumption, which we know is peculiar to youth. Children are more disposed to have affections of the bowels, and worms, perhaps, from a peculiarity in their way of life. They are also more subject to water in the head than those who are older. The young have few affections of the mind, excepting those arising from natural passions, or immediate sensations of the body.

The middle age would appear to have but few diseases peculiar to it, excepting nervous affections and hypochondriasis, &c. The middle age gets into an imaginary region, a region of remance, which produces diseases of the mind, and also affects the body. However, it is, as it were, accidentally affected with the diseases both of youth and age, with which it is gradually intermixed. The foundations for the diseases of old age are often laid by intemperance during the middle age.

In the old we have perhaps as great a variety of diseases as in the young. In the old the power and necessary action are not well proportioned, even in health, much less, therefore, in disease. This produces a degree of irritability often increasing inflammation, and terminanting frequently in mortification. In the old we have the gout, which seldom takes places in the young. Cancer is peculiar to the latter part of the middle age, and still more to the old. Gall-stones are to be found chiefly in the middle-aged and old. Ossifications of arteries are rarely found in young persons. The bladder becomes less disposed to stretch, and more irritable; hence old people make water oftener than young. The prostate gland is more subject to indurations. The mind gradually becomes more attached to [Quære, *detached* from?] this world and the things that are in it the nearer it appreaches to a separation from it.

Effects of Climate on Disease.

Climate in general only becomes the immediate cause of disease; however, it is sometimes sufficient to produce the

whole disease. Climates are of three kinds; hot, cold, and temperate. Hot climates carry on the natural operations both of animals and vegetables with much more rapidity than either of the others.

It is almost impossible to rear young animals in cold weather; therefore most animals bring forth their young in spring and summer. Animals of the same species do not grow to the same size in cold climates as in warm. It is almost impossible to fatten an animal while it is kept in the cold.

Warmth produces action beyond its power of generating strength.

Parts more readily yield to any power in summer than in winter. Mr. Jones, the inventor of the machine for correcting distorted spines, observes that they produce more effect in summer than in winter.

Hot climates produce diseases in the liver, but these diseases are more frequent in the West Indian islands than on the continent of South America or India. They also produce violent vomitings and other disorders in the stomach; also violent affections of the bowels: and fevers and diseased actions, like the natural, are much more rapid than in temperate climates, it being no unusual circumstance for diseases to run through all their stages in a few hours, ending in death, which is speedily followed by putrefaction. Heat produces indolence in the voluntary actions, which is injurious to health, but generally increases the involuntary action or actions of life, which is always hurtful. Cold climates retard many actions, both of vegetables and animals; but cold, when only in a certain degree, and continued for a certain length of time, excites action; but that is the action of strength, the action of resistance or defence, not the action of luxury or ease. Cold climates produce their diseases, though it would appear that they have not equal effects with warm, nor are capable of producing such variety. Whatever diseases are produced by cold are not so rapid as those produced by heat; and after death putrefaction does not take place so rapidly. We may observe a curious gradation in this process: in cold climates, after visible death, absolute life will remain for some time; the muscles will retain their power of contraction, and the blood be kept from coagulating. But in hot climates death is as rapid as disease; for it is action that consumes life. In cold the action is less; in heat it is so great that the body can hardly support it, and death comes on. Cold climates lead to voluntary actions, which generate heat, and this is much more healthful than heat derived from external sources.

In temperate climates there is perhaps a greater variety of diseases than in either the hot or the cold; for the temperate is a very irregular medium, sometimes very hot, sometimes very cold, and often in the middle state; and these changes are not at regular periods. This irregularity produces some irregularity in the wetness or dryness, so that in such climates we have a great mixture. These changes in temperate climates give rise to scrofula, colds, &c., which are the forerunners of a thousand diseases. Agues are also much more frequent in temperate climates.

Seasons.—Seasons which arise from the variations of heat in a climate, produce diseases which will be in some degree similar to those both of hot and cold, and also temperate climates; for seasons are, as it were, a change from one climate to another. Seasons have, besides, diseases peculiar to themselves; they produce an increase of old diseases, arising simply from the change, and call forth those diseases which only want an immediate cause to produce them. The spring and autumn are two of the most unhealthy seasons of the year; the spring the most so, although from reasoning alone, without observation, it is supposed to be the most healthy, and therefore people do in the spring whatever will allow of a choice of time, as inoculating, &c. This idea probably took its rise from observing vegetation, that at this time the plants appear to come into life and action. But, even in vegetables, this season is the most unhealthy: blights much more frequently take place in spring than in summer. Of every disease that can be called constitutional, that is, where there is a strong susceptibility for such disease, we find spring becomes the immediate cause, exciting it to action; thus, scrofula shows itself or increases in spring; the same with rheumatism and scurvy; hence spring is said to set the humours afloat by those who are favourers of the humoral pathology.

I should doubt much whether there is any diurnal influence on our body, further than that which the habitual modes of acting produces; consequently, I doubt if daylight or darkness produces any effect. It is, however, certain that the increase of action which commonly takes place in the day, increases diseased action, producing exacerbations in continuous diseases. It

is probable, therefore, that it may bring on the paroxysms of those diseases which are periodical, and may bring on the first fit of a disease for the same reason.

Effects of the Moon.—The moon has certainly considerable effects on the human body. We find it often become the immediate cause of diseased actions, especially those of the mind. Mad people are certainly more affected at particular periods of the moon than at other times. The full of the moon has the greatest effect; it not only affects those who have a natural predisposition, but also some who have had injuries done to the brain by external violence.

A lamplighter, by a fall, injured his head; upon examination I found a fracture, which appeared to run through the foramen magnum of his occiput; he recovered, but he was seized every spring with a phrenzy at stated intervals, and this was found to be at the full of the moon.

A gentleman had ankylosed knee and ankle-joint from scrofula, and he is always deaf at the full of the moon, except in autumn, when his sores discharge plentifully.

This effect of the moon is increased at certain seasons; in spring it is often greatest. Intermitting and remitting fevers often arise, recur, or become exasperated about the time of the full or new moon, more especially in climates fitted for giving rise to such diseases.

Of Humours.

The term humour has been applied to the animal body, especially the human, both literally and metaphorically. When literally, it is used in two senses, either as expressive of an extraneous substance existing in the blood, or as meaning the blood itself. When used metaphorically it is applied only to the mind, and is therefore more applicable to the human than any other other animal.

Nothing can be more vague, nothing more unphilosophical, nothing more misleading in science, than to employ the same term to express two or more different meanings. In whatever sense the term is used, however, whether as applied to the mind or the body, it always is meant to express the cause of an unnatural or uncommon action or effect.

At present we shall only consider humours in their literal sense, in order to ascertain how far the notion is just or imaginary. I have just said that the word is used in two senses, either as something in the blood, but foreign to it, or else as implying a vitiation, of the whole mass of the blood itself. Among physical people we find such expressions in common use as "the humours are afloat in the blood;" "sharp humours in the blood;" "the whole humours being in a bad state;" "the whole blood must be altered or corrected;" and a variety of such expressions without meaning. They even go so far as to have hereditary humours, as gout, scrofula, &c., and make us the parents of our own humours, saying that we breed bad humours. Accidents, or even the application of poultices, have been supposed to bring bad humours to a part, because the part in which the accident happened, or to which the poultice was applied, would not readily heal. Humours are even supposed to gravitate to the legs slowly; and, in short, the whole theory of disease has been built upon the supposition of humours in the blood, or of the blood itself being changed. I cannot conceive what is meant, unless it be that a strong susceptibility to a specific disease exists; as smallpox may bring on scrofula, or a strain the gout: if in these cases by humour is meant a susceptibility of either of the diseases, I can conceive that any kind of accident may bring it on. The smallpox introduced may excite action, and so bring on the scrofula

I shall now consider the notion of humours afloat in the blood. If I have a just idea of the meaning of this expression, it signifies something extraneous or foreign, something that does not belong to the blood itself. That foreign matter is received into the blood-vessels is certain, and that so received it produces disease also certain; but simply foreign matter being introduced into the blood, either produces no effect or no permanent and specific disease: the constitution, or some part, can be disturbed only as the constitution or part would be disturbed from any accident. Medicines applied either externally or internally, is a proof of this, for all enter the circulation more or less, therefore are in the state of something extraneous, or of humours in the blood. Indeed, chemical analysis of the blood shows the existence of foreign matter, for it discovers substances that form no part of the animal, as sea-salt, iron, earths, &c.; yet these substances produce no ill effects by their presence.

The following experiments show the effects of foreign substances in the blood.

Experiment 1.—I injected into the

crural vein of a dog, towards the heart, a weak solution of sea-salt, which produced no effect. I then made as strong a one as possible and threw that in also, but no effect was produced. The quantity of salt thrown in might be about two teaspoonfuls.

Experiment 2.—I threw a strong solution of Glauber's salts into the vein of a dog,—about two drachms of salt. It produced no effect. The dog ate and drank and had his stools as before.

Experiment 3.—Two ounces of saturated solution of salt of tartar, thrown into the vein of a dog, had no effect.

Experiments 4, 5.—Two drachms of sal polychrest in solution produced no effect.

Experiment 6.—An ounce of water, in which a scruple of borax was dissolved, was thrown into the veins without effect.

Experiment 7.—An ounce of vinegar and water, in equal proportions, was thrown into the veins of a bitch half gone with pup. This brought on an immediate disposition for miscarriage, which took place in about six or eight hours.

Experiment 8 —Water, rendered about as acid as the vinegar and water, with vitriolic acid, was thrown into the veins, and produced little or no effect.

Experiments 9 and 10.—The same experiment was made with nitric and muriatic acids with the same result.

From the above experiments it is evident that substances of considerable power may exist in the blood and produce little or no effects of any kind. We shall find, from other experiments, that there are many substances which have considerable effects when thrown into the blood; still, none of them produce any particular disease, though by repeating them, and increasing the quantities, a man may destroy his health, or even his life, by destroying the natural actions of the body.

But all this is not producing any specific disease; it is reducible to the effects of local applications, which is similar to any accident, producing no specific or permanent disease but what an accident would do, nor lasting any longer than the application lasted.

Experiment 11.—I thew about two teaspoonfuls of a strong solution of opium, two parts water with one of opium, into the crural vein of a dog. The dog seemed to be very sensible of it at first, for he was extremely uneasy, and soon became convulsed, but did not lose sensation, for when touched he started and seemed frightened, and drew back his face when a hand was presented to it; so that irritability was rather increased. I then threw in as much more, which made him still more quiet, and in great measure produced loss of the use of his limbs, so that he could not stand; his breathing became slow and labourious, but his pulse very quick; when he attempted to get up he reeled, and came down as if asleep or drunk.

Experiment 12.—I threw into the veins of a dog two teaspoonfuls of common gin. He showed no sense of uneasiness, but became soon vastly quiet, and not in the least irritable, showing no signs of fear when touched. He seemed wholly relaxed; his breathing was easy, and his pulse slow. He continued above an hour in this way and then began to recover.

Experiment 13.—I threw about two teaspoonfuls of laurel water into the veins of a dog. The pulsation in the vessels became tremulous; he seemed very ill, and could hardly raise his head, but he recovered.

From these last experiments it appears obvious that many substances, having peculiar modes of stimulus, will, when taken into the blood, produce their effects there; but this effect will last no longer than the presence of the stimulus; and we shall find in general that their effects in this way are similar to what they are when taken into the stomach. We find, also, by the above experiments, that many substances thrown into the constitution by the veins, produce the same local specific effects on the intestines with those produced by the substance when taken by the mouth.

Experiment 14.—I threw into the veins of a dog an ounce of infusion of ipecacuan, made with five grains of the powder to two ounces of water. The dog immediately became very sick, and was retching before I could untie the mouth, and as soon as it was untied he threw up all that was in his stomach. He continued sick for some time, and gradually recovered. I can hardly suppose that the injection had gone beyond the heart, or even to it, when it began to act.

Experiment 15.—An ounce of infusion of jalap, made with twenty grains of jalap to two ounces of water, and steeped for twelve hours, was thrown into the veins of a dog. In less than a minute he vomited a little and then seemed well. Thinking that no more effect would be produced, I threw in the remaining ounce. This did not produce any vomiting, nor did he at first seem much affected; but

at last he grew weak on his legs, lay down at times, and then rose again. About two hours after the infusion was thrown in he had a stool, and after this another, which was loose. He remained sensible the whole time, and then got well.

Experiment 16.—In a similar experiment the dog vomited, had some loose stools, and in a few hours got well.

Although many substances do produce similar effects on the stomach and intestines when thrown into the blood as when taken by the mouth, as appears from the above experiment, yet this is not the case with all. In the second experiment, for instance, we find that Glauber's salt had no such effect when thrown into the blood as when taken in the stomach. In like manner,

Experiment 17.—An infusion of rhubarb, thrown into the veins of a dog, produced no effect but that of increasing the urine, which it did plentifully.

Many substances thrown into the blood produce much more violent effects in this way than when taken into the stomach, and even cause immediate death.

Experiment 18.—I threw into the veins of a dog, a little æther, and he died immediately. On opening the body the thorax had a strong smell of æther. However, this effect may depend on the strength of the medicine, as we shall see by the following experiments, that the reason why death did not take place in experiments 6, 7, 8, 9, was the weakness of the solution.

Experiment 19.—I threw some common vinegar into the veins of a dog towards the heart. He died before I supposed it could have got to the heart. Now vinegar, when diluted, as we found before, had no such sudden effect. In the same manner, nitrous and vitriolic acid, diluted to about the strength of vinegar, produced almost immediate death.

Air killed immediately. We should therefore be very careful in making experiments, when we inject substances into the veins, that air does not enter with the substances, and cause the death which we impute to the latter. The Abbé Fontana committed many errors in this way: in short, before any man pretends to determine what will kill, he ought to have killed at least a thousand animals. A poor devil was lately hanged at Warwick upon no other testimony than that of physical men whose first experiments were made on this occasion.

Experiment 20.—I threw into the veins of a bitch half gone with pup a quantity of serum, taken from the blister of a person who was ill of a putrid fever, and soon after died. It made her instantaneously sick, and she vomited. She soon miscarried, but in two or three days recovered perfectly.

From all these experiments we may, I think, at least draw, as a probable conclusion, that extraneous matters taken into the constitution do not produce any specific or permanent disease, that they operate as direct stimuli, producing immediate effects, and that when these are violent they arise from too great a quantity of the stimulating or irritating substance being thrown in.

SKETCH OF THE PRESENT STATE OF MEDICINE, AND OF MEDICAL INSTITUTIONS, IN RUSSIA.

By George Lefevre, M.D., *late Physician to the British Embassy at St. Petersburgh, &c.*

Of the Medical Profession and Medical Institutions in Russia.

1. *Classification of the Medical Profession.*

It is now generally allowed that there is no essential distinction between medicine and surgery, although practitioners of medicine may be divided into different ranks and classes. Perhaps there is no country where this indivisibility, as regards the practice of the profession, is more strictly maintained than in Russia. The division of medical labour, which in former times simplified the duties of the respective practitioners in England, has never been adopted in Russia, where a physician embraces all the branches of the healing art, and acts as physician, surgeon, and accoucheur. If he do not practise his profession so generally as here stated, there is nothing to prevent him from using his own discretion in such matters. The physician in Russia is, in fact, identical with the general practitioner in England, save and except that in no instance does he dispense his own medicines. I employ the term general practitioner, because in reality the apothecary, at least in the English acceptation of the word, does not exist in Russia. Persons bearing this designation are mere venders

of drugs and licensed preparers of physician's prescriptions; they are not supposed to be acquainted with more than the nocuous and innocuous properties of the drugs in their rough state. In no case are they allowed to compound medicines, or even sell the most innocent drug, without a written order from a medical practitioner. Their shop, or *apteka*, is no laboratory; for they are not wholesale chemists and druggists, but mere makers-up of prescriptions.

Many of the English physicians in Russia formerly persisted in adhering to the customs of their mother-country, as to ths division of labour in the profession. In some instances, however, even the most orthodox have waived this point of etiquette. Dr. Dimsdale tried the experiment of innoculating the Empress Catherine for the small-pox; which same operation Dr. Halliday performed on all the Emperor Paul's children, though unquestionably this task appertained to the province of surgeon.

This combination of medical duties is not now a matter of choice, it is one of necessity, inasmuch as the interests of the mass of the communnity are to be considered of more importance than the ideas which a few indivlduals may form to themselves of medical orthodoxy; and in the present day all the English physicians residing in Russia are, as already stated, *de facto*, general practioners.

Although in a practical sense, then, there is little difference in the duties performed by the different practitioners, of whatever rank they may be, still the superiority of rank is, in point of etiquette, most rigidly enforced in all cases where form is allowed to exercise its prerogative There are several classes of practitioners, but the deference paid to each is not in a ratio with their medical, so much as their military or civil ranks. The degrees conferred by the universities are the following:—Physician; Surgeon in chief; Surgeon in ordinary; Staff Surgeon; Surgeon's mate; Hospital mate; Barber surgeon; Apothecary.

In general practice there is no positive distinction in the labours allotted to the three first ranks. The physicinas and the surgeons, in most cases, practise indiscriminately in all branches of the profession. If they hold official situations in the military or civil service, then the difference of rank becomes immediately sensible. The physician receives homage from the surgeons, takes precedence as he passes through the wards of the hospital, signs documents, and makes valid his rank by several operations. The hospital mates, dressed in military uniform, march up and down the wards, halt, face about, and stand attention, as their superiors command them; for all society in Russia is divided into ranks and classes, and medical men are included in this category. Schlatzer informs us that, in 1781, "a physician ranked with a major in the army, and, as such, could drive four horses to his carriage, while those of inferior rank could drive only two. An apothecary at court had the rank of captain, and his apprentices the rank of ensigns. The surgeons of the district had the rank of lieutenants." In the present day physicians are ranked with the eighth class of the nobility, and surgeons in the seventh.

There are few instances, perhaps, where any practical use or abuse of such a division can be allowed to operate, but in some cases the possibility may exist. It is almost a law of the realm that no individual holding superior rank, whether civil or military, can be in the wrong in case of dispute with an inferior; and the spirit of this law is not without its influence in medical concerns. The superiority here alluded to is the honorary rank conferred by the crown, and not the medical one granted by the universities. Two physicians, of equal standing in medical honours, may be widely separated in civil or military rank; and he who bears no insignia of the order of St. Anne or St. Vladimir must give way in consultation to him whose breast is adorned with stars or crosses.

The physician, when called to the service of the imperial person, the *Leibmedicus*, or body physician, takes precedence of all his brethren, and his opinion must prevail in all cases where there is any official duty concerned. In the former part of this sketch it was mentioned that one of the Czars, suspecting that the illness of an illustrious individual was rather to be construed into a disinclination to appear at court, sent his body physician to ascertain the fact. Very similar proceedings take place in the present day. Patients, attended by ordinary physicians, are occasionally visited by body physicians, in order that they may enjoy every possible medical advantage, and this frequently without their request.

The hospital mates and surgeon's mates are completely under military control, although attached to civil institutions. They are subjected to punishments of

various kinds, for any impropriety of conduct.

The apothecaries, as before observed, are not to be considered as the same class of men who are so denominated in England. They are mere venders of drugs and preparers of recipes, and their shops are all licensed by government.

The first court *Apteka* was founded by an Englishman of the name of Frenshman, who arrived in Russia in 1581. He is reported to have brought with him an immense quantity of drugs; but it was some time before the natives understood the necessity of having recourse to medicine. The high price at which drugs continue to be sold in Russia would almost be proof sufficient that the aptekas were established by one of our countrymen; for, if apothecary's gain be synonymous with exorbitant charge in England, it is equally so in Russia. There is no country in which medicines are so highly charged; indeed, the price is almost double what it is in England. The apothecary's charge in Great Britain is not supposed to be in relation to the cost of the material; the value of his prescription is embodied in his draught, and is the means of his remuneration for his time and talents. The matter is very different in Russia, where the the apothecary is the compounder only, and should be satisfied with a fair profit upon the material, as the prescription has already been paid for; whereas, the prices he pleases to put upon it allows of no consideration on his part. It is true that there is a tariff for the price of medicines, to which he is compelled to adhere; but this is excessively high, and not regulated by the current prices of the drugs imported into the empire. The proprietors of these aptekas are almost all Germans.

The regulations which were promulgated by the court physician, Dr. Blumentrost, in the time of Peter the Great, have, with very slight alterations, been handed down to the present time, and many of these are very excellent in their kind. To prevent mistakes arising from an imperfect knowledge of the Latin language, it was ordered that all prescriptions should be translated into Russian, and deposited in the chancery. The name of the physician and of the patient, together with the date of the day and month, were also registered in a book. The necessity of translating the prescription is now abandoned, but all the recipes are deposited in a drawer, and are not allowed to be given back; notwithstanding that each is copied into a day-book, which is subjected to the inspection of proper authorities, who pay regular visits to the aptekas for the purpose of examining into the nature of the recipes. Not only are the original prescriptions not allowed to be returned, but a repetition of the same medicine cannot be procured without the physician's signature. A copy only is permitted to be issued from the apteka. From the same conservative principles, wholesale dealers in drugs are not allowed to sell them in small quantities. No medicine is allowed to be dispensed without being sealed with the private seal of the owner of the apteka, or with the seal of his establishment; for each shop is licensed under some specific name, generally taken from the name of the street in which it is situated; and the number of these is limited. This limitation in the number dates also from a remote period, and proceeded from good intentions; for it was asserted that the number of aptekas should be in a ratio with the demand for the medicines, and that, on the one hand, there should be a sufficient competition to prevent the public from being overcharged, and, on the other, not so great a supply as to allow the drugs to remain too long on hand, and be spoiled by age.

It is difficult to legislate in such matters; but the practitioner in Petersburg will find the advantage of sending his prescriptions to the aptekas which are in vogue, for the same recipe prepared in a frequented shop, or in one not much frequented, may show two very different things.

If poisons are prescribed in any dangerous quantity, the physician is compelled to sign his name in the *poison.book*, and state for what purpose he has prescribed the poison.

When these establishment were first instituted, they were all under the direction of an officer of state, who was styled the *Apteka Bojar*. They are now under the superintendence of a Chancery (*Physicant*), which is a court of appeal and punishment. If a physician can prove that any mistake has been committed in the preparation of his recipe, or that the drugs are of good quality, it is the apothecary who suffers. If he can prove that the physician has made a mistake in the writing of the prescription, the apothecary is at least absolved, unless he magnanimously consent to take the blame upon himself. If the shop-boys are in fault, they are subjected to corporal castigation.

The last class is the *Tsirulnik*, or bar-

ber-surgeon, and is a numerous and thriving brotherhood. It falls to their lot to bleed, cup, draw teeth, apply leeches, and perform other little jobs of minor consequence. They are well paid for their trouble: five roubles, or 3s. 6d., is the common fee for their operation, and they are in great request.

There are no distinct aurists; aural surgery forming part of the practice of the ordinary surgeons. There are likewise but few oculists who devote their whole time to the diseases of the eye. Many physicians and surgeons include the treatment of these diseases in their general practice.

Dentists abound in every street, and their profession is perfectly distinct, and not within the pale of the medical faculty. There are no distinct chiropodists in Russia.

II. *Remuneration of the Medical Profession.*

This subject allows of several divisions, viz., the pay of medical officers serving under government, either in the army or navy, in civil institutions, and in the universities, and the remuneration of private practitioners.

In regard to the remuneration of the private practitioners, it may be summed up in a few words,—it is almost optional with the patient. He pays in a ratio with his means, with his liberality, or with the estimation in which his attending physician is held by the court or by the public. In this respect custom has not fixed any regular fee; but the law obliges a medical man to attend any patient who demands his services, for which the practitioner can claim a fee of five rubies (3*s.* 6*d.*) per visit. This is an extreme law, which however has, within my knowledge, lately been enforced. In most instances, private attendance is paid for at the termination of the case. The payment is often in the shape of presents, as snuff-boxes, diamond rings, and plate of various kinds. It is by many considered not quite delicate to offer a physician money, though few would consider themselves aggrieved by this species of remuneration.

The more common mode of procedure is the following:—A nobleman's family is committed to the care of a physician, who receives annually about 50*l.* for his attendance upon the superior members; while the servants, and the whole of the domestic department, are committed to a practitioner of less eminence, who is styled *house doctor*, and receives about a fourth of this sum. It is incumbent upon them both to be at the daily call of the persons committed to their care, and, as the fee is the same for attendance under all circumstances, they are generally well employed in their respective vocations. In cases of severe illness, (if any of the nobles are in such predicament,) the opinion of those whose constant attendance should warrant the conclusion that they are conversant with the constitutions of their patients is little attended to. Consultation is crowded upon consultation, and the family physician is merely a spectator in the scene. To these consultations, however, he will not much object, for the responsibility will be thereby divided. The consulting physician is paid at the rate of a guinea or upwards per visit, by those at least who are in affluent circumstances. But there is all possible gradations as regards the scale of remuneration; generally speaking, however, the revenues of the first physicians in Russia are much lower than those of the same class in England.

Of all classes of the profession accoucheurs are the most liberally remunerated, and they enjoy an advantage over all their colleagues, viz., that, by a species of habit, almost equal to law, they receive their fee when the patient leaves her chamber. Fifty pounds is the usual remuneration with the higher classes for an attendance which is in most cases nominal; for the accoucheur is in an adjoining room, and is never required to attend except in cases of danger or difficulty. All the attendance is intrusted to midwives, when none is in reality required. This fee also admits of great fluctuation, but an accoucheur of standing and reputation will not receive less than 10*l.* under most circumstances.

When midwives are employed it is usual for them to receive from 2*l.* to 5*l.* for their attendance, even from the merchantile classes, and much more from the nobility. The system adopted is frequently unfair to the regular medical attendant. He is often requested to be within call, but unless there is danger, and the midwife demands his assistance, he receives no remuneration for the loss of his time or sleep. If he be called to the bedside then he is entitled to the full fee; but this places him in the situation of being responsible for all the bad cases, and deprives him of the counterbalancing advantages of all the ordinary ones. Among the middle classes of society these

attendances are stipulated for in the annual salary, which seldom exceeds 14*l.* sterling.

As regards surgical operations, I have no information which I can venture to give as authentic upon this subject. All those of a minor order are not paid for separately from the annual stipend. I am inclined to believe that such operations as lithotomy, amputation, &c., when successfully performed, would be requited with a liberal hand by the higher classes.

The pay of medical men in government employ, whether civil or military, is upon too low a scale to ensure to the individuals even the necessaries of life. In the hospital establishments the head physician receives only Ro. 1500, or about 65*l.* sterling per annum, with lodgings upon the premises, and the usual perquisites of fuel and candles. Such remuneration can ill requite the time which he is obliged to devote to his duties; and were it not that, in general, a hospital physician has private practice, is attached to the court, and probably is a professor in the university, such pay would not entitle him to any respect or consideration. The visiting physicians, who act under his directions, have not the advantages which he enjoys of gratuitous lodgings, nor of the other perquisites; and they receive Ro. 800, or about half the sum of the superior. The service which they perform for this salary is a great demand upon their time.

The hospital mates (Felshers) receive nothing worthy of note; they are lodged and boarded in the hospitals.

With respect to the manner in which professional services in the universities are remunerated, some new regulations have just been issued. The salaries of all the professors are derived entirely from the crown; the students contributing nothing to the maintenance of the teachers. Their education is wholly at the expense of government.

The professors enjoy the privilege of importing, free of custom-house dues, all foreign pamphlets and journals which are published abroad upon those subjects which they teach in the universities, and all such books are not under the control of the censorship.

It is difficult to ascertain precisely what is the value of situations about court in the present day. There are many perquisites attached to such situations, and their value can never be ascertained. The physicians in immediate attendance upon the imperial family are supposed to receive from ten to twelve thousand roubles per annum (500*l.*)

The pay of the medical military staff is the same with that of the hospital civil staff, and varies, according to rank, from 600 to 1,500 roubles per annum. This pay is quadrupled in active service, when out of the country.

There is a distrinct class of court physicians. They perform active services alternately, and are obliged to remain the whole twenty-four hours in the palace. Each of these is called upon to serve about every fifth day. They receive 1,200 roubles (50 guineas) per annum as salary. They have no other duty than that which accident and emergency procure them, and are upon the spot to attend until other physicians arrive.—*British and Foreign Medical Review.*

BIOGRAPHICAL SKETCH OF THE LATE BARON DUPUYTREN.

The life of such a man as Dupuytren ought to be well known to every young candidate for professional fame, as affording an admirable example of what energy, perseverance, and ability will do. He was born of very humble parents, in the year 1772.

At the early age of twelve years, he was induced by an officer of a regiment which was quartered in his native village, to go to Paris. Here he became acquainted with the late M. Alard; and the two young fellow-labourers commenced and prosecuted their studies with the most devoted and unwearied zeal. They had but one paltry room between them; and this served for a sleeping, as well as an eating apartment. All the furniture they had, was a table, a couple of chairs, and one bed; and their cupboard was often but very scantily provided, even with the necessaries of life. Dupuytren used to take great pleasure in his after-life, when in the zenith of his fame and success, to talk of the "res angusta domi," and various hardships which he had to submit to at the commencement of his career. He used to mention an anecdote of his being visited by the visionary enthusiast, Saint Simon, who had early perceived the vigorous talents of the medical student, and was anxious to make him a convert to his doctrines. After a long but ineffectual conversation, the *Saint* rose to take his leave; and, while Dupuytren's

attention was withdrawn to another part, he took the opportunity of putting down a purse, containing 200 francs, in a corner of the apartment.

The proud spirit of the youth refused all such assistance, although he afterwards confessed that, at this time, his pecuniary means were scarcely sufficient to procure him the ordinary comforts of life

It was in 1794, when he was only seventeen years of age, that he first had an opportunity of giving proofs of ability, and an earnest of his future fame. At a public concours, he was appointed one of the "prosecteurs," or anatomical demonstrators at the Ecole de Medicine, then recently established by government. During the next five years he laboured most assiduously in the dissecting-room, and thus laid the foundation of that intimate knowledge of minute anatomy, which, perhaps, more than any other acquirement, served to render him, like Baillie, one of the greatest masters of diagnosis in disease. In 1801, he publicly contested with Dumeril for the place of "chef des travaux anatomiques," but lost it by only one vote. Six months afterwards, however, he was elected in the place of Dumeril, who had been raised to a professorship. He now commenced to lecture upon anatomy, physiology, and pathology. In 1802, Bichat, still in the flower of his age, died; and thus the field was left almost undisputed to Dupuytren, who had been educated in the same school, and had followed out the same method of investigation, as his immortal predecessor had done. In 1803, he was elected "chirurgien de seconde classe," to the Hotel Dieu, the largest hospital in Paris. His rivals on this occasion were Roux, Tartra, and Hedeloffer. In 1808, he was made "chirurgien en chef adjoint," and three years afterwards Sabatier, the senior surgeon, having died, Dupuytren was appointed the colleague of Pelletan. At the same time he succeeded to the chair of medicine operatoire, vacant by the death of Sabatier, after a vigorous contest with M. M. Roux, Tartra, and Marjolin. The concours upon this occasion was one of the most animated and protracted, which has been ever known in Paris. For forty days, "les concurrens furent tenus en haleine;" they were required to give in written answers—in Latin as well as in French—to a multitude of questions proposed, to deliver extempore lectures on surgical and anatomical subjects, to perform operations on the dead body in presence of the examiners, and lastly, to write a thesis on a theme which had been given them.

Dupuytren had very nearly lost the election, in consequence of some delay in completing the thesis! He was generally a very slow composer, and at all times much fitter for the active practical duties of his profession, than for the meditative occupation of the study.

He was now a prominent man in the eyes of the public; surgeon of the Hotel Dieu, and professor of operative surgery at the Ecole de Medicine. Soon after his appointment as one of the chief surgeons to the Hotel Dieu, Pelletan withdrew, in consequence, it was said, of frequent quarrels with his junior colleague. This is not unlikely, as Dupuytren was naturally haughty and ambitious; and all who knew him, were well aware that he never could endure a rival near his throne. While yet a boy, he was fond of repeating Cæsar's saying, "that he would rather be the first man in his own village, than the second in Rome;" and throughout his afterlife, the Napoleon of surgery (as Bouillaud calls him) seems to have always acted on this rather unamiable maxim. The energy, the unceasing assiduity, the devotedness of zeal, and the eminent ability with which he performed the duties of chief surgeon of the Hotel Dieu are above all praise. He spent between four and five hours there daily, visiting and minutely examining his patients, performing operations, superintending dissections, and lecturing. His first visit was usually paid about seven o'clock in the morning, and he seldom failed to return in the evening, to watch the progress of the more interesting cases. Most faithful reports of all these were drawn up by the "internes," and afterwards corrected and arranged by himself. There are at the present time upwards of 700 thick folio volumes of these reports, the cases being all arranged in alphabetical tables, preserved at the Hotel Dieu!

In making his rounds through the hospital, he was generally reserved and taciturn; spoke little, and that little not in the most urbane manner, to the students. In all his actions, and upon all occasions he was the same calm, imperturbable being; ready and prepared for every emergency, never taken by surprise, or moved by any unforeseen danger. "Cette paix, ce calme de l'esprit, ce premier element de tout bonheur, cette divinité de l'epicurisme, Dupuytren le cherchait en tout. Aussi, dans ses leçons, dans ses operations, rien n'etait remis à la fortune;

tout etait muri, calculé, approfondi, prevu."

If there were any unusual symptoms in a case, if the diagnosis was obscure and uncertain, he refrained from giving any opinion at first; he hesitated for some days, thinking and reasoning upon it; and when at length he had arrived at some satisfactory conclusions, his clinical lecture on the subject was a model of excellence. full of impressive thought, and stored with the soundest practical wisdom.

Dupuytren was unquestionably one of the most *medical* of all surgeons. It was not the *art* alone, it was the *science* of surgery, which he explored so much more deeply than his contemporaries. Having his mind enriched with the most consummate knowledge of general and descriptive anatomy, and being intimately acquainted with the whole range of physiology and pathology, he took an enlarged view of every case, tracing it back to its source, discovering the cause which had produced it, the effects which the constitution, temperament, or casual circumstances had occasioned, the changes which it had already produced, and the probable event of its progress and termination. Although one of the most accomplished operators of his time, he never sought for occasions to display his dexterity; it was a greater triumph to him to supersede the necessity of an operation, than even to have performed it well. In the use of the knife, he was always cool and calm; bold and rapid when there was no uncertainty or possible chance of mistake, as in performing amputation of the limbs, and the excision of certain tumours; slow, but steadily sure in the more delicate operations of his art.

No casualty ever disturbed his equanimity. On one occasion he had the misfortune to open an aneurismal tumour, supposing it to be an abscess.—Without hesitation and embarrassment, he at once proceeded to tie the artery higher up—the case did well. Every one has heard of the case of sudden death about sixteen years ago, during the excision of a large tumour from the neck of a young woman; the air entered the external jugular vein, and the girl, after uttering a few moans, died on the table. Dupuytren was the operator: "il est jeté dans une meditation profonde; le malheur devient pour lui le texte d'une des plus belles leçons qu'on ait jamais entendues: l'apropos l'inspirait; le sujet avait saisi les esprits; et surmontant ainsi son propre trouble pour expliquer ce tragique evenement, rejette sur les capricieuses lois de la nature ce que la malignité eut imputé à son imprudence." Dupuytren was remarkably adroit at reducing dislocations. No one knew better how to divert the attention of the patient, and thus to take off in part the resistance of the muscles. We shall mention only one case.

A woman was brought into the hospital with dislocation of the shoulder. Several unsuccessful attempts to reduce it had been already made. Dupuytren, when the apparatus was ready, began to question the patient how she had met with the accident, and as she was answering, said, "your son told me you were drunk at the time." "A ces paroles, la mere indignée tombe dans une sorte d'aneantissement, et le bras est remis"

The immense private practice, which Dupuytren enjoyed, increased the sphere of his observation.* He was the "facilé princeps" of his time. His reputation was not confined to his own country; it was European. Patients from all parts of the continent came to Paris to consult him.

He was honoured with the confidence of two kings, elevated to the rank of a baron, decorated with various titles of distinction, and courted and caressed by the most lofty and distinguished of his country. "Que manquait-il donc," exclaims his eulogist, "à son bonheur. Mais le bonheur n'est point dans la situation; il est dans le caractere; et Dupuytren n'tait pas né pour etre heureux. Tout ce qu'il avait souhaité, il l'avait à profusion; et n'y sentait que vide et desespoir."† In 1833, his health suffered a severe shock; and in the following spring he was induced to travel into Italy. At Rome he met with M. Esquirol, who observing the restlessness and impatience

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* Besides his private and hospital practice, Dupuytren had ample opportunities of studying gunshot wounds, and and the other casualties of military surgery, in 1814, when he was appointed surgeon to his wounded countrymen, after the battle of Montmartre. The "glorious days" of July 1830 also furnished him with a vast field for displaying his consummate surgical abilities.

† We suppose that M. Pariset alludes to the domestic infelicity of Dupuytren. His lady, it appears, left her home;—and from that hour, the haughty spirit of his temper seemed to have taken on all the austerity of a misanthropic melancholy.

of his colleague to return to Paris, asked of him the reason. "Qui vous presse? —Je songe à Hotel Dieu, repond Dupuytren. Vous l'avez laissé dans d'habiles mains, reprend Esquirol. Oui, replique Dupuytren, mais mon devoir." He soon returned to Paris; but it was only to linger out a few months of suffering. He died in the February following at the age of 57. On dissection, a considerable effusion was fouud in the cavity of the thorax, and the brain exhibited some traces of "foyers apoplectiques."

The fortune which Dupuytren had amassed was immense; equal perhaps to what had ever been made by professional exertions. It amounted to nearly £250,000. He bequeathed the sum of £10,000 to the establishment of a museum, and a professorship on pathological anatomy.

We have not alluded to the writings of Dupuytren. He has not done much himself as an author. With the exception of some memoirs on fractures of the fibula, on artificial anus, on calculus and the operation of lithotomy, and of several reports and "eloges" delivered at the Academy, we must look for the record of his doctrines and practice in the writings of his pupils and associates—in the Repertoire d'Anatomie of Breschet and Royer Collard, in Sanson and Begin's edition of Sabatier's Medecine Operatoire, in the great work of Roche and Sanson, on Medico-Chirurgical Pathology, in five volumes, and in his own Leçons Orales, published by Buet, Briere de Boismont, Marx, and Paillard.—*Med. Chir. Rev.*

The London Medical

AND

Surgical Journal.

Saturday, August 12th, 1837.

NORTH LONDON HOSPITAL.—EXTORTION FEE.

All the information which we have from time to time hazarded to bring before the readers of this Journal, relative to the machinations of the *liberal* professors of the Gower Street Company, in their scheme to augment the price of the student's attendance at their hospital, after a very protracted, and no less difficult, gestation, has been delivered to the world in the form of an "Advertizing Sheet, or as our commercial friends would term it, "Price Current," of the various dishes which are to be served up at the approaching session. It is enough for us, on this occasion, to draw public attention, and to excite the attention of the professional reader, more particularly to the terms on which they offer, what the Company consider their staple commodity—the University College Hospital—the notorious North London Hospital of the old Pharmacopœa. It will be recollected these crafty Gower Street tradesmen endeavoured, and succeeded, in erecting an Hospital, to which they gave the imposing name of North London, in order to entrap, as subscribers, the charitably disposed of that district of the metropolis, whilst the *real* objects of these DEALERS was to form an institution, from which they might be able to extract, by some of their legerdemain arts, a certain quantity of money for their own pockets.

At first, when the hospital was established, the SPECULATORS found that the donations of the charitable, though sufficient for its erection, were inadequate for its support, so that in order to carry their crafty measures into full operation, the medical junta unanimously resolved—and it reflects great honour on their benevolent disposition—that they should give up the whole proceeds of the student's fees for the annual expenses of the charity.

The fact that the hospital of the Joint Stock Company of Gower Street, was offered at a much lower rate, nay, scarcely one-half of the demand of the old recognized hospitals, induced, as the SPECULATORS anticipated, a considerable number of those unfortunate young men, who are

compelled by the cormorants of Lincolns' Inn Fields to pay a sum of money to a recognised hospital, and whose small means made it an object for them to procure the necessary commodity at a cheaper rate, to enter to the North London, and consequently up to the present time has this institution been supported by the students' fees.

But the medical faculty of University College Hospital, having found that the fees of the students were no more than adequate to pay the current expences of the establishment, and perceiving, with their eagle eye, that there was no chance of accumulating *pelf* for their own purses without "reforming" the establishment; they have at last arranged and determined on the following bill of fare, which we here insert for the edification of our readers.

Before concluding our observations, however, on measures which all must agree are little calculated to increase the respectability of our professsion,—far less to add to the *fame* of the professors of the liberal University College of this metropolis; and though rumours have been industriously circulated by interested individuals, that the measure on which we have felt it our duty severely to animadvert *has* received the countenance of the Honourable Member for Finsbury, and will receive the support of his talented and influential journal, we will not permit, as far as our humble endeavours go, such a rumour to pass without contradiction, and expressing our sincere belief that they are false, and totally unfounded.

UNIVERSITY COLLEGE HOSPITAL,

(LATE NORTH LONDON HOSPITAL.)

Physicians.—Dr. Elliotson, Dr. Thomson, Dr. Carswell.

Obstetric Physician.—Dr. Davis.

Surgeons—Mr. Cooper, Mr. Liston, Mr. Quain.

Terms of Admission to the Practice and Clinical Lectures.

To students who have already entered in the medical faculty of the College, to three classes, of which the Courses are of six months' duration;—two classes, in which the Courses are of three months' duration, being considered equivalent to one of six months.—

For perpetual admission to the Medical and Surgical Practice, 26*l.* 5*s.*

For attendance during one year upon the Physicians' and Surgeons' Practice, 21*l.*

For attendance during one year upon the Physicians' or Surgeons' Practice, separately, 15*l.* 15*s.*

For attendance during six months upon the Physicians' and Surgeon's Practice, 15*l.* 15*s.*

For attendance during six months upon the Physicians' or Surgeons' Practice separately, 10*l.* 10*s.*

TO PUPILS WHO HAVE NOT ENTERED TO LECTURES IN THE COLLEGE AS ABOVE SPECIFIED,—

For perpetual admission to the Medical and Surgical Practice, 36*l.* 15*s.*

For attendance during one year upon the Physicians' and Surgeons' Practice, 30*l.*

For attendance during one year upon the Physicians' or Surgeons' Praclice separately, 22*l.*

For attendance during six months upon the Physicians' and Surgeons' Practice, 22*l.*

For attendance during six months upon the Physicians' or Surgeons' Practice separately, 15*l.*

(*Note*) Their proportion of these fees has been relinquished by the physicians

and surgeons of the hospital, and is devoted to the maintenance of the establishment.

Every pupil pays, in addition to these fees, 10*s.* to the apothecary and 5*s.* to the secretary.

House-surgeons, physicians' clerks, and surgeons'-dressers are selected from pupils, being students of the College, without additional payments; preference being given to those who, with equal moral character, have obtained the highest honours in the medical classes of the College.

The physicians' and surgeons' visits are made daily at one and two o'clock during the winter term.

Medical and Surgical Clinical Lectures are given several times a-week.

Dr. Davis, Dr. Carswell, and Mr. Quain see out-patients daily in the morning.

THE COURT MEDICAL APPOINTMENTS.

We present our readers with the list of the Court Medical Appointments, by which it appears that Dr. James Clark is placed above the distinguished President of the College of Physicians;—"What a falling off is here, my countrymen!"

ST. JAMES'S PALACE, AUGUST 8.

The Queen has been pleased to appoint the following gentlemen upon her Majesty's Medical Establishment:

Physicians in Ordinary—James Clark, M.D.; Sir Henry Halford, Bart., M.D., G.C.H.; William Frederick Chambers, M.D., K.C.H.

Serjeant Surgeons—Sir Astley P. Cooper, Bart., G.C.H.; Sir Benjamin C. Brodie, Bart.; Robert Keate, Esq

Physician to the Household—James Clark, M.D.

Surgeon to the Household—John Phillips, Esq.

Apothecary to the Person—John Nussey, Esq., and Edward Duke Moore, Esq., jointly.

Apothecary to the Household—John Nussey, Esq., and Charles Craddock, Esq., jointly.

The Queen has also been pleased to appoint—

Sir James M'Grigor, Bart., M.D.; Henry Holland, M.D; Peter Mere Latham, M.D.; Richard Bright, M.D.; and Neil Arnott, M.D., Physicians Extraordieinary to her Majesty.

Benjamin Travers, Esq.; Thomas Copeland, Esq.; William Lawrence, Esq.; Henry Earle, Esq.; and Richard Blagden, Esq., Surgeons Extraordinary to her Majesty.

Messrs. Merriman, of Kensington, Apothecaries Extraordinary to her Majesty.

Charles Dumergue, Esq., Surgeon Dentist to her Majesty.

Louis Durlacher, esq., Surgeon Chiropodist to her Majesty.

Mr. Squire, Chemist and Druggist to her Majesty.

THE ANATOMIST.

MALE ORGANS OF GENERATION.

THE TESTICLES

Are two in number, of an oval form, are contained in the scrotum, and are likewise enveloped by proper tunics.

Tubuli seminiferi are numerous capillary tubes, which form the body of each testicle. They are very long and tortuous, and are arranged in conical fasciculi, which are separated from each other by fibrous bands, derived from the tunica albuginea.

Tubuli recti are from sixteen to twenty in number, are formed by the union of the tubuli seminiferi, and are contained between the layers of the corpus Highmorianum

Vasa efferentia are five or six in number, and are formed by the union of the tubuli recti. These tortuous vessels pierce the tunica albuginea, arrive at the head of the epididymis, and by their union form the vas deferens.

Vas deferens, or *seminal excretory duct*, is of great length, and is folded on itself by innumerable turns for the first

part of its course. By its convolutions it, and the vasa efferentia, form the *globus major*, or head of the *epididymis*, which is situated at the upper part of the body of the testicle; still convoluted, it passes downwards, forming the body of the epididymis, which is narrow and placed at the posterior part of the body of the testicle, and arriving at the inferior part of the gland, it forms the *globus minor*, or tail of the epididymis. The vas deferens having thus formed the epididymis, escapes from the globus minor, and having increased in size and density ascends along the inner aspect of this body, until it becomes connected to the spermatic vessels and cremaster muscle; it then passes through the external abdominal ring and the inguinal canal, and having passed through the internal abdominal ring, it separates from the spermatic vessels, and is conducted by the false lateral ligaments of the bladder to this viscus, along the side and inferior fundus of which it runs, lying internal to its corresponding vesicula seminalis. It here approaches its fellow of the opposite, and both ducts becoming flattened arrive at the base of the prostate gland, where they are joined by the ducts of the vesicula seminalis, their union forming the *common ejaculatory ducts*; these run through the prostate gland and open into the prostatic portion of the urethra at the side of the verumontanum.

PROPER COATS OF EACH TESTICLE.

Tunica albuginea.—A strong fibrous investment, of an opaque white colour, which forms the proper capsule of the gland. From its inner surface it sends two laminæ, which project into the back part of the testicle for about two lines, thus forming the body called *corpus Highmorianum*; from the free edge of which proceed the fibrous bands, already mentioned as separating the conical bundles of tubuli seminiferi, to be attached to the opposite surface of the tunica albuginea.

Tunica vaginalis.—A serous membrane, consisting of two layers, one covering the testicle called tunica *vaginalis testis*, the other lining the scrotum called *tunica vaginalis scroti*. When the tunica vaginalis scroti is divided, its continuity with the glandular layer may be demonstrated by tracing the membrane, when it will be found to be reflected on the side and fore part of the epididymis and testicle, forming a pouch between these bodies, and also for a short distance on the fore-part of the chord.

Tunica communis, formed by the fibres of the cremaster muscle and cellular membrane, surrounds the chord and the fore-part and sides of the testicle.

COMMON COVERINGS OF BOTH TESTICLES.

The scrotum, a production of the common integument, is of a brownish colour, slightly studded with hairs, and sebaceous follicles, presenting in the median line a hard ridge, called the *raphe*, from either side of which it is thrown into rugæ.

The dartos, supposed by some to be muscular, is formed by the subcutaneous cellular tissue and the ramifications of numerous blood-vessels, which give this coat a reddish appearance.

The superficial fascia lies immediately under the dartos, is derived from the superficial fascia of the abdomen, and is continuous with the superficial fascia of the perineum.

Septum Scroti—this partition, which divides the scrotum into two, is formed by the dartos and superficial fascia, these membranes being attached to the raphe, and from thence ascending between the testicles, to the urethra.

BLOOD-VESSELS AND NERVES OF THE TESTICLES.

Each testicle is supplied with blood by the spermatic artery, the blood of which is returned by the spermatic veins; it receives nerves from the spermatic plexus, which is formed by branches from the lumbar ganglions of the sympathetic, from the splanchnic nerves, and from the renal plexus.

Rete testis.—Upon separating the laminæ of the tunica albuginea, which form the corpus Highmorianum, the arteries, veins, and nerves of the testicle, together with its vasa recti, will be seen to pass to and from the gland. The reticular appearance these present is called *rete testis*.

ON THE ENDERMIC METHOD.

By Dr. Bureaud, Riofrey.

While the endermic method was employed in France by the most celebrated practitioners, both in the hospitals, and in private practice, it was seldom had recourse to in England, and it is evident from the relation of the cases that have

been given to the public, that English practitioners were not well acquainted with its rules.

When we introduced the question of the endermic method at one of the Medical Societies in London, a member brought forward some cases treated by this plan, and as he did not precisely follow the rules for this practice, the result was unfavourable.

Dr. T. Thompson, professor at the London University, applied one grain muriatis morphiæ on a raw part of the thigh of a woman who had long been affected with sciatica, in the course of an hour she lost the use of her speech, she vomited, was in a state of delirium, fell into a gentle sleep, and awoke the following day, cured of her sciatica. Another individual was afflicted with mania and had previously epileptic fits, he was much agitated, and during the night was generally in a state of great excitement. Two blisters were applied to the neck, and two grains of morphia were put on the surface, the following night the patient was quiet, and the next day he was free from pain, and irritability of the nervous system.

A young woman, eighteen years of age, had always good health, till four months since, when she first noticed a black spot under the nail of the middle finger of the right hand; the finger had been since several times swollen, red, and painful; it had been opened several times, but no matter escaped. The pain extended up the arm and shoulder to the spine; there was also tenderness on the nerves of those parts. Leeches were repeatedly applied to the dorsal spine, as well as cupping and blistering, without any benefit. The fingers could not be extended, on account of the pain experienced in the attempt; there was heat and redness up the arm, with occasional pain in the spine; she kept the arm close to her side. On the 26th of February leeches were applied to the spine; these were repeated without benefit; and, on the 1st of March she was admitted into the hospital. As her bowels were confined, she took purgatives without effect, and a blister was applied to the spine. A grain of morphia was sprinkled on the abraded surface. This produced a benumbing sensation down the arm to the fingers, but that ceased in the course of three or four hours. A second application of morphia was made, and produced the numbness of the limb again; soon after which she began to recover motion, and, in the course of a few hours, was quite well, the morbid sensations having entirely left her.

The three preceding cases are fully in favour of the endermic method. But in the report of the Westminster Society, given in the Lancet of the 4th of March, 1837, we find that Mr. Chance inquired if Dr. Thompson had applied morphia by this method in cases of tic douloureux. He (Mr. Chance) had applied a blister in a case of this kind, about the size of a shilling, over a portion of the affected part; and placed four grains of acetate of morphia on the abraded surface; slight numbness was produced, but the pain was not relieved. He had also employed muriate of morphia and belladonna, but neither were successful in removing the pain.

What strikes us most in this case is, the surgeon's boldness, who employed *four* grains of acetate of morphia; if chance had not served him, or if rather the omission of some of the rules to be followed, had not preserved the patient from the effects of morphia, its toxical effect, no doubt would have been too forcible.

The patient not having been either benefitted or injured, it is to be presumed that the medicament was not absorbed, either because the blister did not rise and the skin did not come off, or because the medicament was applied too late, and that a new skin had been formed.

Mr. Pettigrew, at the same meeting, related a case in which castor oil applied to the denuded surface of a blister, had cured an obstinate constipation, which had resisted all other means.

Of all the diseases to which the endermic method is applicable, none offers more chances of success, and greater advantages than neuralgic affections; the very seat of pain may be thus attacked, and followed the whole length of the nerve, and even as far as the nervous centre. Wherever there is neuralgia it may easily be treated by the endermic method. The effects of this mode of treatment are incontestible in intermittent fever. Mr. Chomel placed this matter beyond a doubt by the numerous successful experiments made at the Hôtel Dieu, in Paris: the results of this medication are not less certain in every sort of neuralgia than in intermittent fever; and we may be allowed to give some facts taken from our own practice, or extracted from M. Lembert's memoir.

Rheumatic neuralgia—Lumbago.

M., thirty-two years of age, was sub-

ject to lumbago, the least change of temperature, or the least exertion, brought on a fit of lumbago, the mere act of stooping had a similar effect. It was generally on one side of the loins only. The lady, when suffering thus, could not walk without support, or else placing one hand on her knee, and gently advancing side-ways. There is no apparent change in the lumbar region, but there is stiffness in the muscles, they appear contracted, but the patient's endeavours to walk may explain the contraction; under these circumstances the spine seems stretched. In the space of four years, I have treated this patient at least ten times for attacks of lumbago. At first I advised local bleeding, baths, friction; the patient recovered, though slowly. The four last attacks were treated by the endermic method, several small blisters, about the size of a sixpence, were placed under the lumbar region, on the part affected, and as soon as the epiderm was dried up, I dressed the blister with the murias morphiæ; in two or three days the patient was free from pain.

The last time I treated the disease with aconites. A grain of this alcali was mixed with an ounce of lard; I only employed about a drachm of this salve, so that the quantity of aconites was not more than the eighth of a grain, and all of it may not have been absorbed; the patient felt a species of numbness, and was cured in two days.

The opinion of authors is not unanimous on the nature of lumbago, but I consider it mostly as a species of neuralgia. I admit, nevertheless, that lumbago may be attended with inflammation, but inflammation may be but a complication. Lumbago sometimes comes on without the patient being exposed to the cold, without pain or swelling, and without the disease following the course of general inflammations. Besides, the pain is so acute, and there are such marked exacerbations, that there can be no mistake as to the nature of neuralgic affection. Even in doubtful cases, the pain depends so much on the nerves of this region, that the disease caused by rheumatism, or a sympathetic state, principally gives way to the action of medicaments employed under the epiderm.

There are pains in the loins extending the whole length of the abdominal limbs, these pains which are always most acute, are caused by a deep alteration of the uterus, the nerves even undergo an alteration. How then are these deceptive lumbagoes, or sciatica of the same kind, to be treated? Is it certain that narcotic medicines put on the womb will allay the pain? Will medicaments that undergo the digestive action of the stomach succeed? It is at least doubtful, and I have several times very successfully, applied small blisters on the length of the lumbar and sacral nerves, as well as on the branches of the cutaneous and sciatic nerves, so as to relieve the pain of which the womb is the seat.

Sciatica.—In January, 1837, when the influenza broke out in London, several patients complained of neuralgic pains; few authors have signalized the existence of neuralgia, excepting Dr. Lombard, of Geneva, in his memoir on the grippe. In all these patients I found a bilious disposition, which induced me to have recourse to an emetic in the early state of the treatment; several patients were cured by the mere effect of the emetic; but a lady of thirty, was confined to her bed with paralysis, she suffered most severely, and not having been relieved by the emetic in the early stage of the disease, nor by frictions, nor turpentine, recommended by Martinet, nor colchicum, recommended by others, I had recourse to blisters. I placed several on the extremities of the external branch of the sciatic nerve; I employed the murias morphiæ, dividing one grain in several parts, and the following day the patient was freed from her sciatica. I must observe, that when I recommend several blisters, they are put on different branches of the same nerve, but the blisters are not larger than a sixpence.

Dr. Lambert relating a similar case, very properly observes, that it is important to distinguish sciaticas which are symptomatic of a disease of the spine. This distinction is difficult at first, as it is possible to mistake the paralysis which occurs, with the immobility to which the limbs are subjected through rheumatic pains; it is important to understand the case thoroughly, as in the latter circumstance, it is essential to have recourse to strychnine rather than morphia.

Paralysis of both hands.—A miner, aged forty-four, had been attacked eight times with metallic colic, during the exercise of his trade, each time he was treated and cured. During his last convalescence the extensors of both hands became paralyzed. Strychnine was given, the right hand could not be held parallel with the fore-arm, if it were not previously shut. When the fingers were half bent the arm

could not be extended, and formed an obtuse angle with the fore-arm; its movements were slow, difficult, and confined in various ways; its temperature was sensibly weakened. The left hand presented the same phenomena in a less degree. The 8th of March, a blister was applied to each fore-arm, and for the first time the patient complained of vertigo.

The 9th March, half a grain of strychnine on the blister of the right arm; an hour afterwards intense heat of the skin, and sensation of traction in both hands. The following day the patient was able to extend them better, nevertheless the usual vertigo came on. This state lasted till the 13th. At this time a grain of strychnine was applied, in the course of an hour a shock was felt in the fore-arm, and in nearly the whole of the body.

The 14th more strength and freedom in the movements, and in nearly the whole body; the left hand seems free, the fingers easily extended.

The 15th the application is only made on the right arm, in which alone the shocks are felt. The use of strychnine is suspended till the 18th, on account of the vertigo.

The 19th a blister was applied to the nucha so as to act more directly on the encephalon; strychnine was given in doses of two grains for several days, and the hands gradually regained their normal state.

Spontaneous Tetanus.—(Lembert.)—Margaret Broin, of a nervous temperament and nervous constitution, had been five years in the hospital in the ward of incurables, for herpes, seated in the internal part of the thoracic and abdominal limbs; on the 23rd of July, she was walking with an epileptic patient, who fell in her arms in a fit. She was so terrified that she fainted. When she reached her own ward, she tried to relate to her companions what had passed; in the midst of the recital she was seized with convulsions, her face was contracted, the jaws closed so tight that the tube of a pen could only be introduced, the fore-arms stiffy bent, the neck stretched and thrown backwards, and all the body stiff.

There could be no doubt but this was spontaneous tetanus, and I did not hesitate an instant in using the acetate of morphia; at eleven in the morning I placed a small blister on the nucha; I took it off at three in the afternoon, and sprinkled on the surface a quarter of a grain of acetate of morphia. At six in the evening the trismus no longer existed, the other symptoms were the same. I again applied a quarter of a grain of acetate of morphia; at ten o'clock the fore-arms had regained their powers. In the night the muscles of the face, neck, and eyes, had regained their normal mobility, and the next morning the patient had recovered.

Frontal Neuralgia, treated with Assafœtida.—(Lembert.)—A young woman of four and twenty, robust and plethoric, was, for the last four years, subject to hysteria; and without any known cause was attacked with acute neuralgia of the forehead and temples. The following were the symptoms of this disease. Every afternoon between three and four a fit of trembling came on, accompanied by lancinating pains on both sides of the forehead. On the length of the temporal branches of the nerves of the face, the face was wrinkled, injected, the eye-lids closed and contracted, tears and odontalgia to the left, swelling of the artificial veins of the temple, violent beating of the corresponding arteries; heat, giddiness, heaviness, pain in the pharynx, dysphagia, uneasiness, want of appetite; the catamenia regular. Antiphlogistics give momentary relief, but the *tic* came on with increased pain; bathing the feet, drinking linden and orange flower-water, acetate of morphia taken internally gave no relief; frictions with acetic ether, and with acetate of morphia, one grain of which to be mixed in a drachm of lard; the draughts with assafœtida or musk were not kept on the stomach. The patient seemed to lose all courage and was quite in despair.

I applied half a grain of acetate of morphia on a blister, having left it to suppurate several days, it produced no favorable result. I increased the dose to two grains, the neuralgic pain completely disappeared: the weight of the head, vertigo, palpitations, nausea, fainting, thirst, constipation, contraction of the pupils, particularly to the left, still existed. The next morning hysteria, the tic returned; we had recourse to tincture of assafœtida, ten drops were poured morning and evening on the surface of the blister. The following day the shooting pains were slight. The temples were painful on pressure. The dose was increased to thirty drops, and in less than a week the patient had recovered her appetite and was completely cured.

Hemicrania, treated with Sulphate of Quinine.—A young man of three and twenty was affected with hemicrania, while convalescent of gastro-enteritis. During ten days he felt it from five in the

morning till twelve at noon, there were shooting pains and violent pulsations above the right eye, and it is to be observed that this disease broke out in the spring, and during six years the patient knew that at the same period there was slight deafness, and the words resounded painfully in his ears. When the hemicrania was first felt, the state of the intestinal canal appeared as usual; six grains of sulfate of quinine placed on the blister determined a cure.

To the facts here stated, various others might be added; nearly all French practitioners adopt the endermic method. The wish expressed by M. Bouilland to see this method become popular, has been realized on the continent; no doubt that English practitioners, such able appreciators of all therapeutic means, will adopt this plan, and have recourse to it, particularly when they have become acquainted with Mr. Lembert's and Lesieur's experiments, as well as those of the learned professors of the Parisian school.

ON THE MANNER OF DENUDING THE SKIN.

The various means for denuding the skin are blisters, incision, and innoculation.

All animal, vegetable, or mineral substances, which produce vesicles on the skin, to carry off the epidermis, may be employed for the endermic method.

Those most frequently used among animal substances, are cantharides. Among vegetable substances some plants of the class, such as daphnia mezereum, laurela gnedium, several species of euphorbia, various plants of the class of the urticariæ have these irritating powers which deprive the skin of its epidermis, by the anormal secretion of the fluids they induce. Ammonia, caloric, boiling oil or water, are applied for the same purpose, but common blisters are in most general use.

The application of a vesicular agent determines, on the part where it is laid, phenomena of a very important nature, and which should be well understood. In the first instance, the patient feels a burning sensation, which increases till it becomes very painful, it ceases altogether in a few hours, the capillary vessels are injected, the skin red, a serous and abundant exhalation takes place over the surface of the rete mucosum, the epidermis gradually rises from the skin and forms a vesicle, the pain then ceases. The vesicle is filled with albuminous serosity, when, according to the state of the patient, the blister is either irritating, or sedative, and becomes a useful auxiliary, if the endermic method be properly indicated.

When the blister is taken off the epidermis is detached by a limpid fluid, an opening made in the vesicle lets the fluid escape, and affords an opportunity of introducing the medicament without taking off the epidermis. Absorption is then more active: perhaps, says Lembert, the contact of the air may produce the absorbent and denuded parts, an astriction similar to that determined on the arterial and veinous extremities; at the first dressing the transparent pellicle should be carefully removed, to this omission may, in a great measure, be attributed the non-success of several medicinal aplications, and the inefficacy of four grains of muriate morphia mentioned by Mr. C.

When suppuration is established, it must be carefully cleansed, and all the matter covering the denuded part cleared away; this observation is applicable to exutories of long standing, which may serve to introduce medicaments without having recourse to a blister. Yet if exutories are callous, wan, atonic, blisters are more desirable, for œdema, pus, and fungosities prevent absorption: sometimes these denuded surfaces may be vivified by cauterization.

When the inflammation is but slight, absorption is frequently very active; if the inflammation be great, absorption is less; if there be mortification there will be no absorption. It is essentially important when the endermic method is employed, to ascertain in what case blisters are or are not prejucical; for instance in bad typhus fever they cause extensive and deep ulcerations, and are covered with eschars; in œdematous diseases they give rise to sores; this observation may be applied to all cathartic diseases. The time a blister is to be left on also requires the consideration of the practitioner. Is the extent of the surface to be in proportion to the qunntity of substance to be introduced? I think not, and my opinion is founded on my own personal experience, and that of others; more advantage is to be derived from the application of medicaments on a number of small surfaces than from only one of large dimensions. Baglivi, Bailly, de Graves, and other learned practitioners, are of this opinion. Small blisters give a stimulus, and cause a derivation which may be useful; large blisters often weaken more than bleeding, particularly when they are

applied to large surfaces until a considerable vesication is formed.

It is essential to be previously acquainted with the action of medicaments on denuded surfaces; this action is double; local in the first instance, then consecutive. This observation is applicable to various medicaments. Morphia, strychnine, qninine, musk, emetic tartar, and all caustics are known. Humanity and justice require that no medical man should prescribe medicaments unless he is aware of the effects they may produce; all experiments made at the expense of the health or life of a patient is a crime against humanity. The trial of a medicament when all those that are known have failed, may certainly be permitted, as it is for the patient's benefit, but under these circumstances alone: then necessity makes a duty of a trial, which ought nevertheless to be guided by previous knowledge, and a reasonable theory and analogy.

Should there be any reasonable cause for fear after the application of these medicaments, the exutory must be well cleansed immediately, and the denuded surface covered with a substance that will neutralize the effect of the medicament previously employed. Thus M. Lembert arrested the progress of a tetanus brought on by two grains of strychnine, by putting on the same surfuce two grains of acetate of morphia.

Endeavours have been made to ascertain which substances were most easily absorbed by friction, and which best maintained suppuration. M. Lembert thinks that strychnine and emetics are the best.

These preliminaries being laid down, the skin deprived of its epidermis, and the medicament put on the denuded surface, how does absorption take place? This is an important question, and its solution necessarily demands ample developement.—*Continentat and British Medical Review.*

GERMAN CONTRIBUTIONS TO PRACTICAL MEDICINE.

Communicated by Robert Thacker, M.D., Derby.

(From the Medico-Chir. Rev.)

The following interesting observations on the diseases and state of medicine in Chili, are condensed from Professor Poeppig's "Travels in Peru, Chili, and on the River Amazon."*

"The population of Chili is rapidly on the increase, owing to the many advantages enjoyed by the inhabitants in their political position, and also to the circumstance that they are very little exposed to the diminishing influence of disease. Indeed, whatever has been said by earlier travellers of the remarkable healthfulness of the climate, may be credited in its fullest extent. Neither the extreme aridity of the northern provinces, nor the long-continuing or severe rains of the southern, would appear to exert any particular influence on the duration of life, or on the health of the natives. In Mendoza and San Juan, which are only separated from Chili by the chain of the Andes, all classes of the inhabitants suffer severely from scrofula, and cretinism is not unfrequent; in Chili, on the contrary, the latter is entirely unknown, and some traces of the former are only occasionally observed among the residents of the northern parts of the country at the foot of the Andes. The foreigner who makes a lengthened stay in Peru may regard himself as fortunate if he escape a tertain intermittent, which will frequently bid defiance to the most careful and judicious treatment, In Chili, on the other hand, there is no fear whatever of this disease, indeed, many Peruvians affected with it come yearly into Chili with the view of regaining their health. The regularity of the meteorological phenomena, the gradual manner in which changes of temperature take place, the purity of the water used for drinking, the constant winds, and the absence of marshes and damp woods, are the main causes to which the Chilians of all grades are indebted for the particularly good health they enjoy. The infectious diseases occasionally introduced soon lose their virulence under the sky of Chili. The contagious putrid fever of Guayaquils is only remembered to have once appeared at the commencement in some of the northern sea-ports. Smallpox alone is of freqent occurrence, and the fatality occasioned by it is sometimes considerably. The opinion is commonly entertained that this disease always comes

* This excellent work was published not long ago, and is the subject of a highly laudatory article in a late number of the "Foreign Quarterly Review." The author is a talented, observant, and erudite man.

from Peru, probably because it generally makes its first appearance at some sea-port station. Epidemics of small-pox usually occur towards the end of the winter, and from July to November, and it is observed that they assume a more malignant character as the weather becomes fine and warm, and the intervals of rain are longer. The mode of life of the lower classes, and the great want of cleanliness in their habitations, are circumstances favourable to the propagation of the disease; and under this head we must not omit to mention the deplorable maltreatment experienced by the sick, who are confined in the most secluded corner of the house, and dosed with all kinds of rubbish, large fire are lighted, all access of fresh air is carefully guarded against, and the poor patient almost smothered under woollen cloths—a proceeding, it may be remarked, which is observed in almost every case of illness. About thirty years ago, the Spanish government transmitted cow-pox matter to Chili by a man-of-war, but the indolence of the inhabitants has hitherto formed a serious obstacle to the introduction of a general practice of vaccination. Companies supported by the government, are now instituted; their object is to extend vaccination, and this benefit is conferred on the poor gratuitously. At eight localities a vaccinating physician has been stationed, with a yearly salary of from 240 to 280 duces, and one of these gentlemen, named Alvear, fortunately discovered the vaccine pustle in the cows of Chili. In the years 1828, 1831, and 1832, an epidemic of a peculiar malignant character prevailed, and the people, driven by fear, came in great crowds to be vaccinated, so that from 1830 to 1832, the total number of those vaccinated amounted to 37,834. The Indians suffer far more from the ravages of small-pox than the Chilians.

Acute diseases seem on the whole to occur but seldom, with the one exception of typhus, which here, however, is not wont to destroy the powers of life so suddedly as in other countries. In the towns and cities the mortaility is greater than in the country. With respect to chronic affections, the secondary symptoms of syphilis are of the most frequent occurrence; in fact, lues venerea may be considered epidemical in Chili; yet such is the beneficial influence of the climate, that in this country, as indeed throughout the whole of South America, this disease, formidable as it is in northern Europe, is almost entirely divested of its terrors. The countryman pays attention to his diet, drinks infusion of sarsaparilla, and not infrequently recovers completely without the use of metallic remedies. In large towns, however, the disease is not so easily removed, which is partly to be ascribed to the empirical treatment adopted; for here, as in all other countries, how remote soever of the extra-European world, Leroy's celebrated panacea plays a very prominent part, and many other nostrums of Spanish origin are also high in favour. Among the Indians of Chili, lues is not common, and it does not appear to have been ever communicated to the races on the eastern side of the Andes.

It would seem that with the spread of civilization in Chili, diseases heretofore unknown, and which we may feel little disposed to regard as a consequence of our social condition, were at the same time introduced. Thus it is a fact that scarlet fever was not known up to 1831, when it suddenly broke out as a violent epidemic. Yet it was mild, for according to the report of the protomedicus, among 547 cases, there were only twenty-five exhibiting a malignant type (under the form of Febr. scarlat. miliaris), in which typhoid symptoms supervened. Of the latter six or seven died, but of the whole number only a twelfth part terminated fatally.

The science of medicine has hitherto made but small advances in Chili, and it is only within a very recent period that really competent men have begun to enjoy some portion of public esteem. Twenty years ago medicine was practised by men of colour and the most ignorant quacks, the hospitals were entirely under the control of the monks, and the few well-informed physicians, those, namely, who had received an European education, found in Lima a more lucrative field for their exertions than was offered to them anywhere in Chili. This state of things, however, no longer obtains, for the number of physicians is now even greater than necessity requires, and there is a College of Santiago at which medicine is taught, although on a somewhat compendious plan. Still there is a scarcity of educated practioners in the country, where the healing art is chiefly exercised by matrons and old Indian women. The country people are tolerably familiar with the virtues of the rather numerous indigenous plants, but to many of these properties are attributed which the individuals in question do not really possess, and many other remedies, supposed to be of great

efficacy, are soly indebted for the estimation in which they held to a credulous superstition. When any particular part of the human body is the seat of disease, the remedy is sought for in the corresponding part of some animal, variously prepared; thus, for ophthalmic disorders, the carbonized eyes of birds of prey are administered, the claws of the condor are given for gouty pains of the hands, and the flesh of the smooth-skinned lizard for scurfy affections of the skin. For the treatment of ordinary cases, the simple materia medica of the country suffices."—*Poeppig's Reise in Chile, Peru, und auf dem Amazonenstrome.* S. 524—531.

REMARKABLE CASE OF SPONTANEOUS COMBUSTION.

By Dr. Joly.

Bernard, æt. 73, and his wife, æt. 65, have long indulged to excess in spirit drinking. September 6th, they both became intoxicated, remained alone the whole night, and were found dead on the following morning. Four hours after they were found dead, Dr. Joly and the "Procuror du roi" went to see the bodies. The room which contained them was shut. Several pieces of furniture in it were covered with a grey soot. There was a strong empyreumatic smell, and on the floor, between a table covered with bottles and glasses, which had contained brandy, and the cinders of an extinguished fire, lay the legs of the two corpses and a shapeless carbonaceous mass. Two of the legs, belonging to the same individual, had on stockings of black wool and cloth slippers. One of the stockings only was burned at its upper part. The skin covered by the slippers was but reddened; the tissues beneath, when cut into, presented no peculiar appearance. An inch above the knees, the thighs were reduced to a black, shapeless, carbonaceous mass. There were no traces of the external genitals. Of the pelvis, and the parts contained within its cavity, there remained but the calcined superior edge of the left ilium, and the enlarged left ovary buried in the midst of oily and fetid carbon. There was a separation of the articulation of the lumbar vertebræ; and at this part of the body was divided into two, in consequence of having rested upon the other situated beneath it. Two or three vertebræ, which thus became exposed to the air, were consequently calcined and whitened. These were quite distinct from a mass of spongy and shining carbon, corresponding to the thoracic cavity and its contents. The only portion of this which was at all solid was the vertebral column, to which the calcined cervical vertebræ terminated in the incinerated cranium, which was so extremely friable as almost to fall into dust on the endeavour being made to lift it. The lower jaw alone had preserved more consistence. Beneath the remains of this corpse, and forming an X with it, were those of the second. The left leg, naked and covered with vesicles containing a reddish serum on its anterior surface, was burned to the bone the whole of its length, posteriorly. It was disconnected with the body. A cat had bitten the muscles of the calf, and torn them to the extent of several inches. A fatty and disagreeable liquid oozed from this laceration. The right leg was burned like left. Its whole anterior surface was covered with large phlyctenæ, as well as the sole of the foot, although the latter entirely rested upon the ground. About three inches above the knees, the thighs were converted into a heap of black and unctuous carbon. The pelvic region had disappeared. At the part were the former corpse lay across the latter, the clothes were strongly adherent to the remains of the bodies, in consequence of the slowness of the combustion. In the different layers of charcoal which were interposed, it was easy to recognize the character of the garments. The right lung and the liver could be recognized. They had lost about half their size; their surface was hard, varnished, and brittle; when cut, their consistence was that of soft cheese; but the texture of the liver was closer and more homogeneous than that of the lung. The vertebral column and ribs consisted of a more compact carbon than that which was formed by the soft parts. About an inch and a half from the earth was an entire and sooty head. The prominence of the nose and the orbital cavities were still marked. This bony box was broken by the slightest shock, and in the middle of its cavity, resting on the foramen magnum, was the dried brain, about the size of a hen's egg. Of the superior extremities of these two corpses, a few inches of one calcined humerus, and three united and calcined metacarpal bones, only were found. Allowance being made for those parts which had

undergone slight alteration with respect to their weight,—i. e. the legs and feet,—the weight of the cinders of both bodies produced by the combustion was calculated not to exceed four pounds. The time which the combustion may have occupied could not have exceeded fourteen hours. These remains, lying upon a pavement covered by a greasy and stinking liquid, were surrounded by various pieces of furniture, &c. At the feet, the parts most distant from the fire was a table unburnt. The heads lay towards the hearth, in which there was no fire: a fender and handiron had fallen beneath the woman; and between her head and that of her husband was a brand, still burning. On the right was only a wooden shoe; on the left was a chair, one foot, four oars, and the straw cushion, which had been partially burned. There was also a beehive, reduced to a cinder. A few inches above the bodies was a besom made of rush, which was scarcely singed on one side, and some matches, the sulphurous end of which projected beyond a sabot which contained them.

[The circumstances attending these cases of spontaneous combustion agree generally with what has been hitherto observed in such cases. This account differs, however, from others, in two individuals, of different sex, being simultaneously affected; and it adds another fact to the rare occurrence of spontaneous combustion in man. It offers also an example of two individuals placed in such identical physiological conditions, that the combustion affected them both in the same degree and in the same parts].—*Journal des Connaissances Médico-chirurgicalec.*

PROCEEDINGS OF THE ROYAL SOCIETY.

In 1800 several papers by Professor Bode, communicating important facts in astronomy, were rejected. When Schroeter first imparted his discovery of the rotation of the planet Mercury, he met with the same fate which Bode had already experienced; yet not a single astronomer was present at the meeting of the decided Committee! In that same year, Blumenbach was made to withdraw a paper on the *ornithorhyne*, while a paper of Everard Home on the same subject, was ordered to be printed at the same meeting. Professor Crell's various papers on boracic acid, were also rejected by the Committee. A paper on the male Rhinoceros (the single production of an old member), was voted for publication in the following year Committee, which contained not a single naturalist. Every memoir on Piazzi's newly-discovered planet, *Ceres*, by Baron de Zach, Maskelyne and others, were rejected, not an astronomer, or mathematician, or really scientific man, except Rennel, being present on those occasions. On the planet *Pallas*, several foreign astronomers communicated papers to the Royal Society—but these were not published—nor anything allowed to be placed on record in the transactions respecting this second interesting discovery of a planet, until Sir W. Herschel took up the subject.

In proportion as we get nearer to our own times, the importance of the papers rejected seems to be in the inverse ratio of the scientific character of the deciding members of the committee;—and subsequent events have proved that those members have as often decided wrong when they decided for the rejection of papers—as they would have decided right had they not admitted some of the papers which appear now in the Tranaactions, but which are fit only for insertion in magazines and other periodical publications. Could a committee, containing only one physiologist, have judged rightly in rejecting a paper on the relation between the sanguiferous and nervous system, by one of the most industrious physiologists in England? Could they have been right in voting, without the assistance of a single anatomist or natnral historian, a paper not to be printed, which was written by an anatomist, to whom one of the royal medals has since been awarded, and entitled, "on the proportions and measurements of the head, and varieties in the form of the bones of the cranium and face?" When a memoir entitled, "A new method of calculating the value of life annuities," read before the Royal Society, was rejected, there were only three members out of ten who could be judges of the matter under consideration. Well may the two last mentioned scientific "fellows" complain of a system which could work such important results, and well may they muster strong in the rank of its most streuous opponents. What grounds could the committee of papers have gone upon, when, with an insufficient number of competent judges present, they decided on rejecting the memoir of

the Assistant Professor at the Veterinary College, in which he announced his newly discovered method of radically curing chronic lameness in the horse—and at another period, in ordering to be "deposited in the Archives" of the Society, a paper on the composition, nature, and use of certain disinfecting liquids, by the author of three other memoirs published in the Phil. Transactions? Grounds they had none, for no fact has been more triumphantly established than the discovery contained in the first paper; while the second paper alluded to has since been commended by a much abler chemist than any of those who judged in the committee, viz., the Assistant Professor of Chemistry at the Royal Institution. I repeat, therefore, grounds the Committee had none; but there were motives.

REVIEWS.

A Clinical Treatise on the Endemic Fevers of the West Indies, intended as a Guide for the Young Practitioner in those Countries. By J. Evans, Esq. M.R.C.S. London: J. Churchill, 8vo. pp. 309, 1837.

The author of this work very correctly observes, that there is great difficulty in finding an accurate account of the diseases of the West Indies, and that he felt this want when he commenced. He now proposes to supply the deficiency and to record the result of his own operations and experience. He has, in our opinion, accomplished his task with ability, and produced a work which ought to be in the possession of every one who visits the West Indies. He commences his preface by observing

"It is admitted on every hand that of all the diseases which fall under the observation of the physician, none have led to greater discussions respecting their nature, nor to more opposite modes of practice, than those which constitute what is called the '*Endemic*" of the West Indies. Doubts and difficulties beset the path of the young practitioner in these countries, which reading, unassisted by his own researches and experience, only renders the more confused and discouraging. Fascinated, perhaps, by the plausible reasoning and partial views of one author, he sees in the cases which present themselves to him, so many *gastrites*, or *gastro-enterites* of various types. Daily observation destroys the illusion, and his doubts return. Again, he refers to some established authority for information, and is told that these diseases are not inflammatory; that they are general and essential; depending upon a spasm of the extreme vessels; on a disturbance, interruption, or suspension of the alternate uniform action and rest of the irritable and moving parts of the body; on an affection of some part, or the whole of the nervous system; or on a disease of the blood, &c. &c. He is bewildered and confounded, and either ceases to think further upon the subject, or else endeavours to explain the "proximate cause" in the manner his observation teaches him. Such has been my case—and such is the apology I offer to the public for bringing before it the present treatise. My object is to exhibit the cases as they have occurred to me in all their varieties; to detail faithfully their symptoms; to expose the appearances that the different organs presented after death; and to explain, as far as I am able, the physiological operation of the producing causes."

Mr. Evans gives an account of the discrepancies of writers on fevers, and then proceeds with his work. He commences with the topography of St. Lucia, one of the most unhealthy of the West Indian islands. Next describes the malaria, its effects on the body, the diseases which it produces, their pathology and treatment, and lastly a great number of clinical cases in illustration. His account of malaria deserves attentive consideration by every medical practitioner, and therefore we shall quote fully.

"This name is given at the present day to a peculiar principle, with the nature of which we are as yet unacquainted, but to the effects of which the febrile endemics, particularly those of an intermittent or remittent type, that at different periods have been seen to obtain in certain parts of the world, have been and still are almost universally attributed. By the bulk of physicians it is supposed to arise from animal or vegetable matters, or both united, in certain states and stages of decomposition. It is true that this opinion is not universal. Dr. Fergusson attributes the origin of this poison to water during the process of drying. This gentleman says that 'one only condition is indispensable to its production, and that is the paucity of water, where it has recently abounded. It is the drying margins of the lake or pool from which this poison uniformly emanates, and never

from the body; and he thinks that it may be fairly presumed that water, for as long as it can preserve the figure of its particles above the surface, is innoxious, and that it must first be absorbed into the soil and disappear to the eye, before it can produce any mischievous effects."

"Others have supposed that the causes which give rise to this poison exist in the emanations from ground of a volcanic formation, produced by the action of the sun's rays. These emanations, they state, contain quantities of deleterious gases, as sulphuretted dydrogen, carbonic acid, and azote, which affect the vital principles of the human frame. We will presently investigate the truth of these opinions. We must now examine the properties of malaria when arising from swamp, or from the decomposition of animal and vegetable matter.

Marsh or Swamp.

Both these terms are used to signify a tract of country of greater or less extent, the suface of which is habitually covered with stagnant water, and the soil underneath is formed of a clay mixed with the detritus of vegetable and animal matter in different stages of decomposition. In the West Indies, the greatest number of these swamps have a communication with the sea. They are covered with mangrove bushes, to the trunks of which myriads of the mangrove oysters are attached, and they also contain marine animalculæ and small fish, in such abundance as to render the mud upon their surface frequently highly phosphorescent. It is this kind of swamp which, according to Humboldt, contains the constituents necessary to furnish the most virulent species of malaria,—viz. tannin and albumen combined.

"By marshy or swampy lands are meant those places subject to occasional inundation, either from the overflowing of a river, from heavy falls of rain, or from any other cause; where, in consequence of their position and the firm and plastic nature of the soil, the water lodges, until carried off by evaporation, and mixes with decayed vegetable and animal remains.

"The mud thus formed, when acted upon by the sun's rays, emits vapours deleterious in proportion to the quantity of orgrnic matter which has been mixed up with it and to the activity of the causes which assist in its decomposition. Many countries which under ordinary circumstances may be healthy, become under these fruitful in disease.

"In the neighbourhood of Castries we meet with both permanent and occasional swamp, the former being the mangrove fen to the north-east of the town, and the latter is found in all the environs. When both are in full operation, we observe the greatest number of cases of fever: that is when hot and sultry weather has succeeded heavy falls of rain.

"During the months of Augnst, September, and October, the heavy showers which are daily occurring in these latitudes are sometimes alone sufficient to inundate the whole surface of a flat country; but when we take into consideration the peculiar formation of St. Lucia, its succession of hill and valley, we must here add another and more important cause to its partial inundation. The waters rush down the steep sides of the mountains, carrying with them the detritus of animal and vegetable life, and cover the plain or valley with a rich, but unhealthy coat of alluvial soil. The river, instead of acting as a drain to the overflooded valley, cannot discharge its own contents, its mouth being blocked up by sandbanks, further strengthened by the fallen trees, shrubs, and earth, carried down from the neighbouring heights. Thus the whole valley is laid under water, which does not retire until the force of the stream has broken through this barrier. In the mean time, the matters contained in the water depose and remain in the form of rich mud and manure upon the surface of the land, which, however valuable it may be to the agriculturist, is exceedingly injurious to his health.

"The cultivation of the Anse des Roseaux valley began about thirty-six years ago; since this period not fewer than 800 negroes have been placed or born upon one estate; only 270 remain. The proprietors (two brothers) are notorious for their lenient and kindly dispositions. The work performed by the slaves has always been very inconsiderable, and the annual number of births has averaged sixteen. This decrease in persons who are supposed to withstand the effects of marsh better than any other class of the human race, is terrific. A gentleman establishing an estate in the neighbourhood, purchased in the year 1802, fourteen African negroes at Dominique: in nine months there was not one remaining. As it is now almost entirely cultivated, it is much less injurious to health than it then was; but even at the present mo-

ment very few acclimatized Europeans, or even Creoles of other parts of the island, can long withstand its effects.

The old and permanent swamp just mentioned as adjoining Castries, constitutes the upper extremity of the basin of the Carenage. It was formerly entirely covered by the sea, and is partially so now at high-water. It may, therefore, with some propriety be divided into two portions: that over which the tide continues to flow, and that which, from its higher situation, is no longer exposed to the action of salt water. The former is thickly studded with mangrove bushes, and contains an immense deposit of decomposed animal matter; the latter is luxuriant with wild canes, guava trees, and logwood, and the proportion of animal matter is less.

"This swamp, for a foot or eighteen inches from its surface, is composed of a black mud of unpleasant smell, containing the leaves and small branches of the shrubs which grow out of it. Below this, to the depth of five or six feet, its appearance was thus described to me by my friend Mr. Taylor:—'It is composed of a solid matter of a yellow colour,' says this gentleman, 'exactly resembling rotten horse-dung, containing some marine shells, and is principally formed of the fibrous parts of vegetables mixed up with animal matter. The odour emitted by this substance is indiscribable, but disgusting in the extreme, producing a sweeetish sickly taste in the mouth, pharynx, and upper part of the œsophagus, with a discharge of saliva. A thermometer thrust into the sides of a canal five feet deep, rises rapidly to 100° and upwards; the temperature appears to be greater than that of any dunghill, and communicates a tingling, unpleasant feeling to the hand. The vapour which arises from it is very evident, being opaque, like smoke, and though it fills the canal, ascends only four or five inches above the level of the swamp.'

"There is another and more extensive, though probably less noxious fen, which extends along the sea-shore of Chocq Bay, to the distance of three or four miles It is cultivated in small detached patches, here and there; the rest is covered with wild canes, and resembles rather the jungles of India or the Pontine Marshes than a West India swamp; for the most part it is firm, and admits the passage of a horse, but in places it is treacherous under-foot and impassable. Its surface is composed of a vegetable debris. I am unacquainted with its structure underneath.

"Though swamps are composed of vegetable remains mixed with animal matter, they differ considerably amongst each other in their degrees of virulence, which bear an exact proportion to the quantity of organic matter, (particularly the latter,) in a state of decomposition, which they contain, and also to the powers of the agents which promote this effect. Therefore in countries where both these states abound, as in the West Indies, swamps are the most injurious to life."

Our author next describes the chemical characters of the exhalations from the swampy St. Lucia.

"It is to these emanations that we are to look for the causes of the operation of marshes upon the human body, and many wild theories have at different times existed respecting their nature. One of the oldest among them, and which was republished during the seventeenth century, supposes that marsh generates a number of infinitely small insects, which escape into the surrounding atmosphere, and, penetrating our bodies through the pulmonary passages, produce disease. The chemical physiologists supposed that these emanations contained vapours of a saline and sulphurous nature, which corrupted the fluids. Bernardo Ramuzzini thought that they were acid, and that they acted upon the body by coagulating the blood. The humouralists attributed the diseases which reign in a marshy country to heat and humidity alone. Hoffmann considered that the vapours from swamps when expended in the atmosphere produced a heaviness of the air, deprived it of its energy and elasticity, and rendered it unfit for the vivification and expansion of the blood and humours, and thus, by coagulating the former and corrupting the latter, gave rise to putrefaction and disease of the whole body. The chemists of the present day have attributed the noxious principle in these emanations to certain gases, as hydrogen combined with sulphur, carbon, or phosphorous, or some of the combinations of oxygen with azote.

"A broad-mouthed glass vessel placed over a cleared portion of swamp, the surface of which is tolerably dry, and on a fine evening, soon becomes filled with a watery vapour, which is condensed on the inside of the vessel in the form of small drops or beads of dew. M. Julia states that this fluid is capable of fermentation, and M. Vauquelin gives us the following description of a quantity collected by M.

Rigaud de l'Isle. 'It is clear,' says the chemist, 'but when agitated we shall see small floculent particles suspended in it; it has a slightly sulphurous smell, similar to the white of an egg when boiled Amongst the different reagents employed, the nitrate of silver, nitrate of mercury, and nitrate of lead were the only ones which produced any effect upon it, announcing the presence of a muriate and of an alkali; this was further proved by its changing to blue, litmus paper reddened by an acid. The residue was of a yellow colour, weighing at most two or three grains; it had a saltish taste, became blackened by exposure to heat, produced a slight effervescence with acids, and formed with the nitrate of silver a yellow precipitate; this precipitate was partly soluble in nitric acid, and the remainder became white.' From this experiment M. Vauquelin concludes that this fluid contains animal matter, ammonia, and the muriate and carbonate of soda. The fluid was obtained from a swamp in the Papal states, and we may, I think, conclude, *à priori*, that were experiments made upon the vapour collected in this manner from the old mangrove fens of the West Indies, the result would be the same, except that in the latter the active products, as animal matter and ammonia, would be found in greater abundance. From the experiments of M. Julia, however, it would appear that the dew arising from swamps differs only from rain-water in containing a small quantity of animal matter. M. Devèze, as well as Brocchi, found no difference between the air in the most pestiferous places and those noted for their salubrity; but all admit that there is a deleterious something which our present knowledge cannot take hold of.

"Poisonous exhalations arise from other collections of animal and vegetable substances besides marsh; and allowance being made for the circumstances with which each is essentially connected, they seem to be identic. The products from both, as far as chemistry can detect them, are similar, and their physical and physiological laws seem to be the same.

"The gases evolved from the decomposition of vegetable and animal bodies, are oxygen, hydrogen, carbon, azote, in different proportions and in different combinations, according to a variety of circumstances under which collections of this kind may exist,—according as the one or the other may be in excess—according to other matters with which they may be combined, as water or earth—according to the facility with which they have communication with the atmosphere—to the different *species* of animal or vegetable matter of which they may be composed, and to the activity of the causes which produce decomposition. Thus we meet with sulphuretted, phosphuretted, carbonated and carburetted hydrogen, ammonia, deutoxyde of azote, carbonic acid, &c.

"These gases are exceedingly prejudicial to health, and produce death in different ways when introduced into the lungs, and injected into the circulation. It has been supposed, that to one or other of these substances we are to look for the poison of malaria. Such is, however, not the case, for they cannot, under any circumstances, produce the diseases in question. Though some, or all of them, are continually escaping from such a swamp as I have described, and are expanded into the atmosphere, yet, so far from infecting it, they cannot be detected in the air immediately surrounding their source by any means we at present possess. And where some of them, arising from other causes, exist in such quantities as to be appreciable even to the senses, as is the case in the town of Soufriere, we we never find them as agents in the production of disease.

"It is a fact pretty well established, that the emanations from swamp are much more deleterious during the night than during the day. The sportsman wades through the stagnant waters and mangrove bushes which cover the surfaces of the West India fens in search of game, with comparative impunity; but long before the sun has disappeared beneath the horizon, he seeks to place himself beyond the reach of their poisonous effluvia, taught by sad experience the necessity of prudence. The reason is obvious: these emanations consist principally of aqueous vapour, produced by evaporation from the surface which contains within it the deleterious principle of malaria. During the day this process goes on rapidly under the influence of the sun's heat. The vapour once escaped is quickly absorbed by the lower stratum of the atmosphere with which it has come into contact; and this body of air, holding in solution these emanations, becomes heated and rarified, and forms an ascending column, making room for the stratum immediately above it, which, in its turn, after undergoing the same changes, is replaced by a third. These miasms

where they have attained a certain elevation, are carried away by the wind."

"During night things are very different. The swamp has an elevated temperature of its own, dependent upon the chemical actions which are going on in its bosom, the products of which are most constantly evolved, and escape at the surface in the form of a vapour. The influence of the sun has now ceased to be felt, and this vapour, do longer dissolved, as in the day-time, hangs in cloudy messes over its birth-place; the lowness of the swamp, and its own gravity, preventing its being dissipated by the currents of air. The surface of the earth, and most of the substances which cover it, as grass and brushwood, are excellent radiators of caloric, in consequence of which they acquire a temperature some few degrees below that of the atmosphere, when they cease to be acted upon by the sun's rays. This vapour, condensed in part by the coolness of the air, is still further so by the leaves and grass with which it in contact, and is deposited upon them in the form of dew. We must not confound this with common dew; it is purely local, and is rarely found at any great distance from its source.

"The baneful effects of marshes are still further confined by an adhesive quality which these emanations seem to possess in a very eminent degree. Air charged with malaria is filtered, if we may use the expression, by its passage through a screen of any kind, as a plantation of trees, the bushes which grow from the swamp itself, or any similar obstruction to its free transition, which breaks and divides its particles. Under these circumstances, the poison attaches itself to the opposing body, and the air escapes purified and innoxious. Marshes which previous exercised little influence on the health of the inhabitants of a town in their neighbourhood, become instantly the cause of epidemics when cleared of their covering shrubs, or when an intervening wood or forest is cut down."

A Mauual of Percussion and Auscultation, as employed in the Diagnosis of Diseases in the Chest and Abdomen. By D. Spillan, M.D. 32 mo. pp. 88. London: Jones, Aldersgate-street. 1837.

This is a waistcoat-pocket manual for the student and young practitioner. The author is known, by his talents and industry, as the translator of Andral's work, the London Pharmacopœia, and other productions. He has given a concise account of Percussion and Auscultation, and in so cheap a form that every student may possess it. It is manual well worthy of a place in the student's library. It is one of those medical trifles now in vogue in this metropolis, not only for the use of junior students, but even for the benefit of the practitioners of the old school.

TO CORRESPONDENTS.

Clinicus.—It appears to us that the case is nervous delirium. Sir E. Home, towards the latter years of his life, always took large doses of calomel, repeated according to the violence of symptoms.

Erinensis.—Our Limerick correspondent is decidedly wrong in supposing that Mr. Crampton is in the seventy-first year of his age. We have reason to know that the worthy Surgeon-general has not yet advanced far beyond his fiftieth year, and is still in the fullest vigour.

Pathologist.—We have not seen the royal *specimen*; application should be made to Mr. Balderson the *procurator*.

Anatomist.—Sir Astley is supposed to have dissected not less than three thousand mammæ; most of which are preserved. Applications for inspection should be made by letter, post paid. A certificate can easily be obtained.

Aspirant.—We do not know the address of the Erlangen Agent, in London. We believe the fee for a medical degree does not exceed £45, if no agent be employed. The sum of no less than £60 has been exacted in more cases than one. The presence of the candidate is not necessary, but it is requisite for the Senatus Academicus to have "attested copies of certificates."

Diamond cut Diamond.—If our humourous correspondent had taken the trouble to examine the printed list of the London College of Physicians, he would have seen Dr. Jewel's name amongst the permissi lately licensed.

Argentum.—We have again to repeat that all letters are returned to the post-office when not post-paid.

All communications and works for review to be forwarded, (carriage paid) to Dr. Ryan, 4, Charlotte-street, Bloomsbury-square.

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LECTURES ON DISEASES OF THE SKIN,

Annually delivered in Paris,

By M. Biett,

Reported by MM. Cazenave and Schedel.

ERYTHEMA.

Erythema is an exanthema which is not contagious, characterized by slight superficial redness, irregularly circumscribed, and variable in form and extent. All parts of the body may be the seat of it., but it is observed more particularly on the face, chest, and extremities; being usually confined to one of these regions, it may extend to several, and, even in some cases, it may attack simultaneously the entire surface of the body.

Erythema most frequently proceeds in an acute form, and its duration varies from one to two weeks. In some rare cases it is intermittent, when it accompanies a fever which assumes this type, or when it supervenes during the paroxysms of a bad fever; its duration is then most usually proportioned to that of the diseases with which it is developed.

Symptoms.—Without in general being preceeded by any constitutional symptoms, erythema appears in spots of greater or less extent; the faint and superficial redness differs from the deep and more deeply seated tint of erysipelas. This redness disappears under the pressure of the finger, to re-appear immediately after. The form of the spots, which is most frequently irregular, is sometimes entirely distinct. The heat and pain, which in general are inconsiderable, are occasionally hardly perceptible. Finally these spots, which are almost always unaccompanied by any tumefaction, are sometimes, on the contrary, attended by a swelling either of an indolent or painful character, but always more or less circumscribed, which gives to the eruption a peculiar appearance, and constitutes two different varieties.

One of these varieties (*eryth. papulatum*, Willan) chiefly attacks women and young persons. It is principally observed on the neck, chest, or arm, at the back part of the forearm, and over the back of the hand. The patches are of small extent, irregularly rounded, seldom exceeding the breadth of a centime; they are slightly prominent, and, as it were papular. Though red at the onset they soon present a purple tint, particularly at the centre. In the space of from thirty-six to forty-eight hours, the tumefaction diminishes; there only remains the tint, which is on a level with the surrounding surfaces, and which disappear in one or two weeks. At other times, on the contrary, the tumefaction continues, and the patches appear more prominent. (*eryth. tuberculatum*, Willan)

Another variety (*eryth. nodosum*, Willan) is rather frequent. It is observed in children, women, and young persons of a delicate constitution and of a lymphatic temperament. It may be developed in the different regions of the body, but it generally occupies the chin, the arms, and the fore part of the leg. In the majority of cases, a state of general illness, of depression, and some fever, precede by some days, or accompany the appearance of the exanthema. The latter presents itself under the form of red spots, of an oval appearance, a little elevated towards the centre, the extent of which varies from a few lines to nearly an inch in diameter. On passing the hand over these patches, they are observed to be a little raised above the level of the skin, and to form real nodosities; the tumefaction increases slowly, and some days after their first ap-

pearance, small, red, painful tumours are found, which evince a tendency to suppuration; but their size soon diminishes, a bluish tint takes place of the original redness; they become soft, and gradually disappear in about ten or twelve days.

Causes.—Erythema may be idiopathic or symptomatic. Idiopathic erythema arises from the more or less direct action of divers external causes on the surface of the skin. Thus it is produced by the repeated friction of two contiguous surfaces of the body, more especially in children and persons of greater or less embonpoint. It is then observed beneath the breasts, in the axillæ, in the groins, at the upper part of the thighs (*intertrigo*, Sauvages). Under the same circumstances it also appears on the buttocks, and at the inner part of the thighs, after violent exertion in walking or riding. Erythema may also be produced by the action of the Sun and of cold, by the contact of fluor albus, of the gonorrhœal or dysenteric discharges, of the urine and fæces. It sometimes appears on the upper lip, occasioned by the contact of the acrid fluid which flows from the nostrils in coryza.

Erythema is oftentimes symptomatic of a gastro-intestinal affection of an acute or chronic nature; and then it is during the paroxysms it is principally observed. It often appears in children at the period of dentition. It attacks plethoric persons and women at the critical period. It often comes on after the ingestion of irritating substances, and it is sometimes observed after the use of balsam copaiba.

Idiopathic erythema in general terminates quickly in resolution, in a few hours, or a few days at most. Sometimes slight desquamation takes place, whilst, in some cases, a sero-purulent sweat of a disagreeable odour takes place on the surface of the diseased part, (in intertrigo).

The erythema symptomatic of acute affections sometimes disappears rapidly without perceptible desquamation at the time the paryoxisms cease (*erythema fugax*). The same may be said of that which is observed in some cases of intermittent fever; at other times it does not terminate till seven or eight days by a slight desquamation.

Erythema may exist with anasarca of the lower extremities. The surface is then smooth and shining and confluent spots are observed here and there, (*erythema lævе*).

It precedes and accompanies a number of eruptions, and in these cases it enters altogether into the particular descriptions of the latter.

Diagnosis.—Not only the other exanthemes, but eruptions also of a different order might be confounded with erythema. Of all these affections, those which present most difficulty, particularly in some cases, are the following:

Erysipelas.—Erythema, which several writers have even considered as a degree of this disease, differs from it however in many distinct points. No mistake, however, could be made, except in cases where it might happen to occupy surfaces of small extent; for the more or less circumscribed spots of the other varieties of erythema could not admit the slightest doubt. Even then the redness which is entirely superficial, the absence of tumefaction, the absence also of pain, which is constant, burning and acrid in erysipelas; the mild course of the disease, and the termination, which is almost always rapid and always favourable, are so many characters which serve perfectly to distinguish it.

Roseola.—In roseola the redness is superficial as in erythema, but it differs by a more or less deep and very characteristic rose tint. *Erythema nodosum*, which alone might perhaps be confounded with the irregularly circular spots of roseola, differs from it in the redness which is never so well circumscribed and in the accompanying tumefaction.

Measles and Scarlatina.—Measles and scarlatina differ from erythema, the one in the irregularly semilunar form of its spots, and the other in the raspberry-colour of the broad patches which characterize it; these two diseases are moreover contagious, and are accompanied by a group of symptoms peculiar to them.

Urticaria.—The *erythema papularum* is the only form which could be confounded with urticaria. But the latter affection differs from it in the greater elevation of its patches, in the absence of the violent tint observed in the papular erythema, in the itching which accompanies it, and in its irregular and oftentimes rapid course.

Lichen urticatus.—This same variety of erythema may be taken for a lichen *urticatus;* but in this latter affection the papulæ are less broad, more rounded, and firmer; their colour is not near so deep, and, as in urticaria, there is always an itching, which is often very intense.

Syphilitic spots.—These spots may present, at first sight, some resemblance to erythema; but their duration, their

copper or greyish tint will always be sufficient to distinguish them; they are also frequently accompanied by other venereal symptoms.

Prognosis.—The prognosis of erythema is never unfavourable.

Treatment. — Idiopathic erythema promptly disappears on the removal of the causes which may have occasioned it; soothing lotions, warm baths, and proper care constitute the entire treatment. When it depends on the repeated friction of two surfaces, whether in children or in adults, it is necessary to sprinkle on the affected parts some absorbing powder, the power of lycopodium for instance, and to prevent friction as much as possible.*

The treatment of symptomatic erythema depends on the disease which it accompanies; by combating the gastro-enterite of which it may be one of the symptoms, the necessary indication of cure is fulfilled.†

The erythemes, or morbid red spots which frequently appear in women at the critical period, or which coincide with a retardation or suppression of the menstrual flux, require the employment of blood-letting, of diluents, strict regimen, and of the means applicable to the plethoric state

The *erythema nodosum*, though the most serious form requires, in general, no particular means of cure; topical applications are entirely useless;‡ baths, gentle laxatives, and in some rare cases, small bleedings, constitute the entire treatment.

M. Biett has described another very remarkable variety, which he has called *erythema centrifuge*, and which very seldom fell under his observation.

This erythema, which appeared almost exclusively in young persons, and principally in women enjoying good health in other respects, seems chiefly to affect the face. It commences by a papular point, which takes on an excentric increase, sometimes large enough to attack a considerable part of the surface. It ordinarily appears under the form of well-rounded patches, about the breadth of a thirty sous piece, red and slightly elevated. The edges are very prominent, and the centre is sound and depressed; the heat and redness are very great. This erythema usually leaves a depression on the cutis.

The causes of this variety are but little known. It several times seemed to coincide with dysmenorrhœa. M. Biett adopts a plain antiphlogistic treatment.

*Epidemic erythema.**—During the years 1828 and 1829, there prevailed in Paris an epidemic affection (Acrodynia), which presented, as one of the most prominent symptoms, an erythema more particularly confined to the feet and hands, and ordinarily accompanied more or less by a thickening and exfoliation of the epidermis. Whether most of the persons who presented themselves at the hospital St. Louis, were more particularly directed thither in consequence of the erythematous inflammation, or whether this symptom was one of the most constant in the epidemic, certain it is that almost all those treated by M. Biett in his wards, and who came under our observation, as also those seen in private practice, presented more particularly this erythema, which was noted among the most prominent phenomena by all the authors who have described this epidemic affection.

After having experienced, for a longer or shorter period, oftentimes a month or

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* Should the affection be attended with a serous or fœtid discharge, a lotion made with a weak solution of chloride of lime or soda, or of creosote, will be found efficacious in restoring a healthy state of the affected parts. When fresh irritability of the parts exist, Dr. Bateman recommends the use of a lotion consisting of ten grains of bichloride of mercury, and six ounces of lime water.—*Ed.*

† In order to promote the excretions and assist the digestive and assimulating functions, which are very important points in the treatment of this affection, deobstruent and alterative purgatives, mild tonics, with the alkaline subcarbonates and diuretics, diaphoretics more particularly at bed-time, as James' powder, with small doses of calomel and opium, are to be recommended.—*Ib.*

‡ "Entirely useless," not only useless, but they may be injurious. Change of air and light diet are of great benefit in the treatment of this variety. The small bleedings here recommended are more particularly necessary, when the disease appears to be connected with the catamenia, or of any other discharges; and it may be remarked that the bleeding should precede the employment of any other means of cure.—*Ib.*

* Besides the *epidemic* erythema here mentioned, M. Alibert describes an *endemic* form of the disease, to which the inhabitants of the north of Italy are subject; and goes by the name of *pellagra*.

more, some indisposition, headache, inclination to vomit, pains in the limbs, and very generally obstinate purging, the patients felt in their hands, and more particularly in the soles of the feet, a sensation of numbness and of formication, and darting pains, which in the generality of cases, increased during the night. These latter phenomena were almost always accompanied by perversion or diminution in the sensibility of the parts affected. Frequently the least pressure, or the slightest touch, was excessively painful; at other times, on the contrary, the sensibility was so dull, that some patients lost their shoes without perceiving it.

Sometimes the sense of touch was almost entirely abolished; at other times the patients could not touch the smoothest bodies without the latter appearing to them to be covered with rough points. This state, which proceeded to paralysis and wasting of the limb, sometimes existed without inflammation of the skin, but most frequently it preceded, or, what was more common, it accompanied an erythema, which, in the majority of cases, presented itself with the following symptoms:—the hands presented, on their palm or surface, a crimson redness, *which disappeared under the pressure of the finger*. Some points were covered with a hard, yellowish, and very thick envelope. Other surfaces seemed, as it were, depressed, and were much more sensitive. An inflammatory areola, about half an inch in breadth, covered the radial and ulnar edges. Frequently on the back of the hand, and more especially on a level with each articulation, erythematous points of a deep red colour were observed. The feet presented a similar appearance. Only the whole plantar surface was most commonly covered with a harder and thicker envelope, more particularly on the toes and heel. This envelope ceased abruptly at both edges, where the skin changes its structure, to cover the back of the foot, and was exactly bounded in this place by a broad zone of erythematous and well-marked patches. The dorsal aspect, in most cases, presented no trace of inflammation. Sometimes erythematous surfaces were found in other parts, and more especially on the bursæ, thighs, in the axillæ, but without any thickened epidermis.

Finally, in some cases, the skin presented a very remarkable black tint *(pytiriasis nigra)*, whilst in other cases it was covered with eruptions of a different kind. This affection most frequently existed without fever, or any disturbance in the digestive functions. But in some cases the latter were sensibly changed. In some patients again, obstinate ophthalmia, œdema of the face and extremities, &c., were observed.

The *epidemic erythema* presented nothing determinate either in its progress or in its duration. It sometimes developed itself towards the last stage, but sometimes later; at other times it continued for several months, diminishing perceptibly; frequently it disappeared after some weeks.

This disease, of which the cause remained unknown, prevailed epidemically. It attacked all ages, but more especially manhood and old age; both sexes, but men more frequently than women. It was observed to prevail among the poor more than among the rich.

Blood-letting, and more especially the application of leeches to the edges of the feet and hands; plain baths, alcaline baths, and vapour baths, rest and moderate diet, were the only means employed to combat the epidemic erythema with most advantage.

LECTURES ON SURGERY.

By John Hunter, F.R.S.

Of Humours.

Poisons come nearest to the idea of humours, but still are not what is meant by humours, nor have ever had this term applied to them. Natural poisons will act somewhat as the substances used in foregoing experiments did, that is, either stimulate the whole, or part, to increased natural action; or irritate the whole, or part, into some unnatural action, but which will last no longer than the poison is present. The sting of a bee affecting some more than others demonstrates that there is a greater susceptibility in some for such actions than in others, and that it cannot be imputed to humours in the blood, unless we could suppose a humour similar to the poison of a bee, which then might act without that cause.

I suppose that bugs bite everybody, but some they do not affect and others they do.

This is not so readily demonstrable in the poisons that enter the constitution, though even they cannot be said to be assisted by any humours in the blood.

Other poisons, which we call morbid, produce a specific disease similar to the original; but all this does not come up to the idea of humours. A humour is something which is supposed to go on teazing the constitution if not extracted, and is even supposed to be capable of leaving one part and going to another.

What comes nearest this idea of a humour, but only so in its effects, is a surfeit; yet though its effects may resemble those which are entertained of humours, we know from the mode of their origin that they are not caused by a humour. It is a mode of action taking place in the skin from a stimulus or irritation being applied to the stomach. Drinking cold water when a person is hot will produce it. In a similar case, I have seen inflammation come on in the heart and lungs; but they being less able to bear the action than the skin, it proved fatal.

The method of cure of those diseases supposed to arise from humours gives us no idea of the disease having arisen from extraneous matter in the blood-vessels. Can we form any idea how bark should extract humours, when it rather stops all evacuations? And yet it cures many diseases. Would bathing in the sea cure those eruptions of the skin which are supposed to arise from humours if they were really caused by them? Can we suppose that electricity extracts any humours, when it cures an ague?

It is not easy to account for the blood having been supposed to be the cause of disease, excepting from it appearing in a bad state after bleeding, and this is always a *secondary* symptom. Sometimes, when this diseased state has not been very great, medicines have been given to sweeten the blood.

On Hereditary Diseases.—Hereditary, in the animal œconomy, is applied to properties or peculiarities communicated from the parent to the child.

This principle, according to the common notions, may be divided into two kinds: the transmission of natural properties, and the transmission of diseased, or what I shall call acquired or accidental properties. The last is not hereditary in all its causes, for it always requires an immediate cause before the action will take place; therefore its cause is not similar to the first. To produce an exact hereditary effect, there must be an hereditary cause or causes; and as in all animals of distinct sexes, in their propagation, there are two causes acting to produce a third, the first and second causes ought to be exactly similar in all their dispositions and powers of action, or else the hereditary effect must be a mixture of both, either in equal proportions, or one side may preponderate more than the other. And this we find to be the case. A true and perfect hereditary cause is such as will produce its effects under all circumstances of life, not requiring the influence of any external circumstances whatever. It is hereditary for every animal to produce its own species, which may be reckoned the first hereditary principle. It is hereditary for every animal to produce the proper sexes, whether hermaphrodite or of distinct sexes. Of these distinct hereditary species we have varieties; and if the varieties, whether original or accidental, are such as can be communicated to the young, they are then hereditary qualities. Of this kind we may reckon shape, both of the whole body or of parts, the varieties of which come nearest to the original hereditary principle of shape. Size is a similar principle, as we see it is common for tall or short persons to have children of their own stature. Colour is another of these varieties, for we find this may become part of the principle of propagation, though not so permanent as some others. This property belongs to the epidermis, with all its appendages, as hair, nails, &c., which is subject to greater varieties perhaps than any other part: and those hereditary susceptibilities for certain dispositions and actions of the mind are perhaps as much hereditary as any other property in an animal.

These are what we may call permanent hereditary principles, becoming part of the constitution, and as subject to be produced in the offspring as any effect in nature. They are such as will take place under every external influence, as season, climate, &c. It is from these varieties being hereditary that we have a continuance of them from parent to child. When both parents are constitutionally alike, they will produce children like one another, and also like themselves, though this is not absolutely certain, for a less marked hereditary principle may arise so as to produce children very unlike the parents. But if the disposition to produce similiarity in the children to the parents be different in the two parents, it is impossible to say what the produce may be like.

Hereditary varieties will often last for some generations,and then become extinct, seeming, as it were, worn out. A large

nose shall be continued in a family for several generations, and then cease. A peculiar gait, the turning in of one or both feet, shall in the same way continue hereditary for some generations; and it is very possible that if such children were to intermarry with one another, the hereditary disposition would never be lost.

There are latent hereditary dispositions, which pass over one or two generations, and start up again in the second or third.

Children are generally more like one another than like either parent, because they have the united principles of the parents, which are dissimilar, but united will produce the same results.

Parents may not be at all times disposed to form children alike. This difference seems to be owing in some degree to the time between the births of the children; for we may observe that twins are more like each other than like those born a year or two apart, and these latter more alike than those born at the distance of several years.

If the varieties, as white, black, &c., are not original, they must be monstrosities; and then we may say that the disposition to produce monsters continues and becomes hereditary. The white negress, who may be called a monster of the black variety, being supposed to be born of black parents, and being herself white, with woolly hair, is a remarkable instance of the different dispositions of parents at different times. This woman married to a white man, and had three children, one quite black, and the others tawny.

A gentleman had two children, both born with a disposition to exostosis; the son showed it earliest, and had exostosis on each thigh-bone, and indeed an increase of every bone in his body. The girl was little better off. Neither of the parents had any disease of the kind, but gave the disposition to their children by joint operations.

Of the acquired Hereditary Principle.—In these cases the principle is such as to require accident, or some external cause, to produce the disposition in such as have the susceptibility. In this case the susceptibility only is hereditary; but the disposition and action require the application of external influence before they will appear, and are therefore accidental. The action in this case is generally some disease

As the susceptibility is in some degree hereditary, the immediate cause has been in some degree overlooked, and the disease has been called an hereditary disease; but it is impossible for a disease to be hereditary when one of its causes cannot be hereditary. It may be hereditary for a man to be irritable, one man may be more readily put in a passion than another, but no man goes spontaneously into a passion, there must be some violence committed on the mind; and so various are our minds, that some shall be put into a violent passion at a circumstance which would only slightly, or perhaps not all, excite another.

The natural susceptibility for diseased action is so strong in some as to require only a slight secondary cause to put it into action; in others so weak, that it requires great violence as an immediate cause to bring on the effects.

All hereditary dispositions must be more prominent than those that are acquired or accidental; therefore people who have an hereditary susceptibility for any diseased mode of action will in general have it constantly, at least it will not vary so much as some others. It will not be of that kind which has a great tendency to disease at one time and not at another: such fluctuating dispositions cannot be hereditary.

Scrofula is one of those diseases which is supposed to be hereditary; but is only the readiness to fall into this peculiar action, when properly irritated, that is hereditary; and when such a cause does not exist we find no scrofula.

Gout is another disease which is supposed to be hereditary, and there is often great reason in appearance for supposing that it is so. This is a diseased action which perhaps every one is susceptible of; but some fall into it much more readily than others, and this readiness may be hereditary. But this readiness never takes on action by itself; it must have the immediate cause to excite it, which is a stimulus of a particular kind. We find gout attacking people whose parents for many generations have not had it, and often never. We see it starting up in countries where luxury is introduced, where it was never known before. However, there are many instances where it would appear to be hereditary, as in the case of young men of fifteen, the sons of gouty men. But I suspect that this does not arise simply from the father's having had the gout, but from the circumstance that most people who have had the gout severely deserved it, and that children have inherited the disposition for the way of living as well as the susceptibility for the disease, and will therefore be more

liable to fall into the disease than children at large.

On this principle of the hereditary nature of diseases, if it be just, every disease under the sun will be hereditary; but many diseases having a stronger visible cause has made the hereditary susceptibility in them to be overlooked. Thus, the small-pox is as much hereditary as scrofula or gout, but from its arising in all cases from poison communicated, and evidently not in a spontaneous manner, is the reason why the hereditary susceptibility has been overlooked. But on our principle the small-pox is as hereditary as any other, only requiring the immediate cause to act to produce it as in any other disease. We may make the same observation with regard to the venereal disease, for we see some persons much more susceptible of this disease than others are, and suffering more severely from it when they get it.

I do not know that we have an instance of observation which proves that the circumstance of a person's having had the disease renders him more liable to communicate that susceptibility to his offspring than if he had only the susceptibility for the disease, without the action having taken place. If it was a fact that the parents having simply had the disease, in some degree entitled their offspring to it, the human species would soon become extinct in those places where such diseases arose; and if the parents having had the disease increased the susceptibility in the offspring, both small-pox and lues would have become incurable by this time. So that the immediate cause, whatever this may have been, does not in consequence of its having had its full effect either give or even add to the disposition for such action.

The only difficulty I find, in stating this as a universal doctrine, is in the case of madness. This is allowed to be hereditary, and is I believe as much so as many, yet I cannot find the immediate cause in many cases. It would appear that the disposition to produce action is so strong as to go into action without the application of an exciting cause. It would be worth while to see whether people in a state of nature ever go mad; if they do not, then the state of mind in the civilized state is the immediate cause.

A gentleman informed me that he had paid particular attention to the diseases of Indians, and that he never heard of an Indian going mad.

On the Effects of Mind on Diseases.—When on the animal œconomy, I observed that the mind was formed by the senses, as also the will; that the will produced the voluntary actions, but that the mind produced actions both of the voluntary and involuntary parts, which actions are often very irregular and undetermined. On the state of the mind, therefore, the latter will depend, or at least they will change with it, and even the former may be affected by it; indeed there is not a natural action in the body, whether involuntary or voluntary, that may not be influenced by the peculiar state of the mind at the time, and every particular mode of the mind has some parts that are more readily influenced by it than others. The skin is affected by the feeling of shame; the secretion or even the non-secretion of the testicles takes place under certain states of the mind. Palpitations of the heart and quick respirations are brought on by some states; purging and increased secretions of the urine by others.

In voluntary parts we can also perceive the influence of the mind. It often produces actions independently of the will, especially when these actions are begun by the will, and when the mind is affected by a recollection of them; or even contrary to the will. Thus, fear produces a vibratory contraction of all the voluntary muscles, while the will is doing all it can to stop it. Since the mind has such power over the natural actions of the body, we might suppose it would have considerable effect in disease; and this we actually find it has, especially in those who have a strong susceptibility for such actions as the mind can most easily affect. We should naturally expect that it would be diseases principally connected with the nerves that the mind would most affect, though we do find that there are other diseases, with which they appear to have little connexion, that are much affected by the state of the mind; and I believe that it is principally those diseases in which the alteration is in the action of parts, not in their structure.

Minds which are particularly irritable are most subject to such diseases, having the acting part more under the control of the mind, and less under that of the will; also the involuntary powers are more under the influence of the state of mind, as the heart, &c. These diseases are called nervous, and more peculiarly belong to women, who being less acquainted with the real properties of natural things,

are more apt to imagine preternatural ones; and their reasoning powers not being so strong, they indulge the actions of the mind more, and allow it to take possession of the body; for the mind can often prevent diseases of such a nature as are contrary to health, and depend on voluntary actions, of which take the following instance. A woman, aged forty-six, of a good-natured disposition, had been troubled for some years with a drawing of the neck to one side, by the contraction of one of the mastoid muscles: this it was always in her power to prevent, by contracting the opposite muscle, when she sufficiently recollected herself. The right muscle, the one affected, did not contract of itself, unless by some accident she of her own accord contracted it a little, after which it continued contracting till it produced its full effect. When her mind was agreeably engaged she seldom felt it, or when conversing with an intimate friend or reading; but fear and every other unpleasant state always produced it. If she expected to see any stranger before whom she was particularly anxious to hide her defect, had it always more violent than usual. This circumstance of the mind's continuing action when it has once taken it up, is remarkable in hiccup, which is often produced by laughing; thus hiccuping, which is an involuntary action, is produced by laughing, which is a voluntary one. But as the state of the mind is thus capable of producing disease, another state of it may effect a cure: so the hiccup may be cured by producing fear. There are other diseases which a state of the mind may cure, though they have not been brought on by it, as agues have been cured by charms which have been used with a thorough conviction of their being a sovereign remedy. I am apt to suppose that a spider's web, when taken for an ague, cures in the same way, at least in one case; for on giving it without the patient's knowledge, it had not the slightest effect; but by persuading the patient that it was a spider, the effect was produced, at least the disease did not return. Even tumours have yielded to the stroke of a dead man's hand.

It often happens that there is a suspension of some actions in an animal body and those actions return again. Thus, we have epilepsy, which is a suspension of the sensitive principle's actions. It is perhaps impossible to know the cause of these suspensions, and equally so the cause of their return. I am apt to suspect that suspension of natural action becomes the stimulus to the powers to put themselves in action again; or, in other words, the suspension becomes by its continuance a force imposed on parts to act, and they act to relieve themselves. Thus, by stopping respiration we have such a stimulus raised in consequence that we can no longer live without the action, and the action takes place.

I suspect that opium often produces a struggle between the necessity of action and the consciousness of the preternatural suspension, which rather rouses. Death, which is the ultimate suspension of all actions, seems to explain that, as a person seldom dies without a struggle or convulsion. Convulsion appears to me to be an action arising from a consciousness of debility; as if there was an endeavour to act to preserve life, but not being able to preserve it, they give up the contest.

Of Symptoms.—A symptom is a sensible effect of a diseased action. The first mode of sensation is when disease is shown directly, without the medium of any other reference, and is known only to the patient; of this kind is pain. The second is where it is given by a reference to some other sense, as that of touch, smell, &c., and is common to the patient and others; of this kind is the swelling of tumours, the redness of inflammation, &c. The third arises from a deficiency of sensation, and can be known only to the patient himself. It is by description and the second set of symptoms that the practitioner receives his information. Local disease may produce only the first mode of intelligence, as pain; or it may proceed to the second, as inflammation; or the second may be produced without the first, as indolent tumour, not known till felt by the hand.

Pain is a simple sensation which is common to many diseases, and is divided into several kinds, as sharp, sore, numbing, heavy &c. The sharp pain is that produced by cutting with a knife; the sore, from inflammation and ulcers; the heavy, that which takes place in rheumatism; the numbing, from pressure on a nerve. The sharp and sore depend on what I shall call vibration of pain, particularly the latter. The heavy seems to be a continued pain, or where the repetitions are so quick as to appear continued; but probably all of them are owing to a succession of actions of the nerves. We refer all the sensations we can to those senses which give us the greatest intelligence. We call them sharp

pains from their giving the sensations of anything that bites, or stings, as bees, or acids on the tongue; heavy, from their giving us the sensation of bearing a weight on the part. A gentleman who had a hemiplegia said his sensation was similar to an acid on the part, that is, to that feeling on the tongue.

We have often a bad taste in the mouth, or a bad smell; this is not always a sign that the saliva or mucus is altered in its qualities, as it is in salivation from mercury, which appears to be from the taste and smell of the mercury, but it is sometimes produced by a morbid action of the nerves. We have these symptoms, together with ringing in the ears, commonly in beginning of diseases, and probably they arise from the actions of the diseases in the nerves of the part.

Neither susceptibility nor disposition for diseased action can produce a symptom; it must be preceded by action; though I believe that there will sometimes be an unnatural feel in a part before action has taken place, as before a fit of the gout attacking the foot an indescribable sensation is sometimes felt, and when the action takes place the constitution is relieved.

Symptoms are either local or universal. Local, as chancre, cancer, &c.; universal, when they accompany universal diseases, as fever. Local symptoms may produce universal ones, which is a means either of increasing the local symptoms or of curing the disease. Local symptoms will vary according to the nature of the disease; its violence, or its situation, as inflammation, will produce different sensations in different parts. Universal diseases will produce some of the following symptoms: affection of the pulse, which arises from the heart's sympathizing and partaking of the disease; the alterations are very various, as full, strong, weak, small, &c. The secretions are altered, as in fever; the tongue becomes covered with its own secretion, at first white, afterwards brown, or sometimes black, which last colour arises from blood being mixed with the secretion. The tongue also contracts in size, and we have often thirst without its being dry, and sometimes, as in low fevers, very dry without thirst, which last is owing to a diminution of sensation in the nerves, and is an unfavourable symptom. The urine is high-coloured, without sediment, owing to its being retained long in the bladder, from debility of that organ or from blood being mixed with it. The respiration fails, from debility in the lungs. The heat of the skin is altered from too great or too little action of the vessels. The colour of the skin in some diseases changes, as from white to yellow, in a very short space of time, not from jaundice, the white of the eye not being changed; nor could jaundice be so quick in coming and disappearing; it is probably a change in the rete mucosum of the skin, such as takes place in the chameleon and some other lizards: veins of the skin are enlarged by any tumour seated beneath them; as in hydrocephalus, tumours of the breast or of the uterus during gestation, the veins of the head, chest, or belly will be found enlarged.

The feeling of the part is the first mode of intelligence. Suppose a stone in the kidney; it may produce three symptoms: 1st. Pain in the part; 2d. Vomiting, which is symptomatic; 3d. Bloody urine. Now these symptoms may occur in other diseases, independently of stone; if they are combined, they afford a pretty certain diagnosis of the presence of stone, but any one or two of them leaves it doubtful. These symptoms attend the passing of a stone through the uterer, as well as when in the kidney; and when a stone gets from the ureter into the bladder, the symptoms abate, and a different pain is felt, and this change occurring confirms us in the opinion we had before formed of the existence of a stone.

Anomalous Symptoms.—These are not immediately expressive of the disease, but make the diagnosis doubtful. They are very numerous, taking in all the symptoms which occur from dentition, worms, &c. Many of them are from sympathy, which we mentioned before.

CLINICAL LECTURE

DELIVERED BY

DR. ELLIOTSON,

AT THE

UNIVERSITY COLLEGE HOSPITAL,

August 3, 1837.

I have first, said Dr. Elliotson, to direct your attention to a case of amaurosis, which was greatly relieved by iodine; we did not know the exact amount of improvement when the patient left the hospital, but it appears to be a remarkable instance showing the efficacy of long-con-

tinued perseverence in the use of iodine; but of course there are many cases of amaurosis which iodine has no power of curing.

Hysterical affections simulating peritonitis—Remarks on the diagnosis—Cure of the hysteria.

The next case is one in which a mistake might easily be made in the diagnosis. It frequently has been committed, but more frequently formerly than at the present time.

Cass.—A female, aged twenty-nine, admitted June 6, 1837, married, fruit-stall-woman, father dead, mother living, of scrofulous habit.

Previous diseases.—She was very unhealthy whilst a child; seven years ago she had phrenitis, and typhus fever three years afterwards; she has not been thoroughly well since. Three years ago she had a large ulcer on one leg which seemed to improve her general health, as the latter was much worse when it healed up. After this the gums sloughed, and the alveolar process at the anterior part of the lower jaw, with it the corresponding teeth; this cicatrized. The stomach has been in a deranged state for some time; this circumstance induced her to apply to the hospital for relief.

Symptoms on admission.—A great sense of oppression and of faintness at the pit of the stomach, tenderness in that situation and all over the abdomen, pain in the back and loins, especially on sitting upright, when there is also a dull, heavy, aching pain, and sometimes a lancinating pain in the abdomen; more especially at the upper and left part and epigastric region; a darting pain along the spine; slight cough, no expectoration; sleeps well at night; perspires abundantly; lies easiest upon the back and léft side; pulse seventy-six, compressible; respiration thirty-five; tongue slightly furred; breath fœtid; appetite very bad; bowels very costive; uterine functions regular.

You observe her chief complaint was the abdominal pains, pain and tenderness all over the abdomen, and at the pit of the stomach. In peritonitis there is pain all over the abdomen; and perhaps also pain at the back and loins, as in this case; but the most remarkable circumstance to be noticed is, the tenderness over the whole surface of the body; this is not met with in peritonitis. By merely pressing down gently the integuments of the chest upon the ribs, there was great pain felt. There was a dry and slight cough, which also may occur in peritonitis, particularly if the upper part of the peritoneum be inflamed. In peritonitis patients can frequently lie on either side, but easiest upon the back; such was the case here. There was functional disturbance in the stomach and intestines, which is the case in peritonitis; but the pulse was only seventy-six, the urine plentiful and pale, the expression of the countenance did not indicate that the tenderness was of an inflammatory nature; therefore, as soon as I saw her, I ordered a shower-bath and decoction of aloes compound (ʒij) twice a day, to have full diet, and to commence taking the carbonate of iron (ʒss.) in treacle, three times a day. Now, in peritonitis, this treatment would have been highly improper, not only to have ordered the bath and aloes, but it would have been also improper to have omitted the use of mercury, and local or general bleeding. However the tenderness diminished in two days, and she felt stronger than before. She felt cold for a short time after the bath: and when that is the case it should either be left off or the temperature be raised a few degrees: here it was omitted

17*th.*—No tenderness, the sensation of faintness gone.

20*th*—The tenderness has not returned. She took by mistake five grains of blue pill, three times a day for one day, which brought on headach and giddiness.

Od the 25th she was discharged cured, and went out perfectly well. I have before mentioned that such cases as these were treated, and some years since I should myself have treated it, for chronic peritonitis, not being able to persuade myself that there really was no inflammation in the case.

Chorea treated by carbonate of iron.

The next case is also a disease of the nervous system; the former case was a disease of the sensitive part, this is an aftion of the motor part of the nervous system. In chorea there is no morbid sensibility, but an inordinate degree of muscular action.

Case.—A female, fourteen years of age, was admitted May 16, 1837. Conformation slender, sanguineous temperament, maid of all work.

History.—Eighteen months ago she was in this hospital for chorea, brought on by fright, and was treated by carbonate of iron for three months. The present attack commenced about two months back with involuntary motions of the left

side. In nervous diseases the affection frequently comes on first, and sometimes remains on one side of the body only. The symptoms were irregular; and involuntary motion of the upper and lower extremities, and of the muscles of the head and neck, with frequent flexion and extention of the trunk, and movements of the facial muscles, all interrupted during sleep; no pain; no weakness. You observe in this case what I have so frequently pointed out; there was no local affection, either of the head, chest, or abdomen; the pulse was natural; respiration good. Many persons say this disease arises from a disordered state of the digestive organs; and prejudice is so great, that it is common to refer an obscure disease to that condition of the digestive function, than to take any trouble in investigating its nature; no doubt a disordered state of the bowels may be a cause of disease. sesquioxide of iron (℥ss.) in treacle was taken three times a day; full diet.

June 3rd.—The convulsive motions were much less.

June 17th.—Nearly well; nothing particular having occurred requiring daily entry.

June 26th.—Discharged, cured. The treatment at first did not go on so fast as I could wish; therefore the dose of the iron was increased to ℥vj. three times a day, and the effects of this increased dose were directly seen. The improvement which followed was decided. Here you have the fact of a child taking a large dose of iron, and the fact of rapid improvement from its use in this disease.

Dr. Elliotson made some general remarks on rheumatism, saying that the case only illustrated facts which he mentioned at the last lecture, and which he had frequently an opportunity of stating, viz., that there are two forms of rheumatism, one which, in conformity with popular language, he calls "hot," from being attended by an increase of temperature, or made worse by heat and all stimuli; the other the "cold," or atonic, being removed by heat, stimulants and friction. It is of great consequence, says Dr. E., to make this distinction, not only with rheumatism, but in many other diseases; to distinguish the tonic inflammatory form from the atonic or passive form, in which there is deficiency of strength, for there may be great excitement with want of strength, and stimulants do good. These facts are exemplified in delirium; there is "hot" delirium, so to speak, attended by a flushed face, hot and dry skin, quick and strong pulse, requiring active antiphlopistic treatment; again, there is a cold delirium, with a pale face, cool and moist skin, a quick and weak pulse, which state is relieved by stimulants and opiates. It is the same with vomiting; it may be inflammatory or not; in one kind attended by pain, increased by pressure, relieved by cold drinks, local bleeding, &c.; in another kind, the pain at the stomach is relieved by stimulants, by warm applications, &c. Now it is the same with rheumatism, and it is an affection of parts near to the surface, we can easily judge of the temperature, and consequently judge very readily as to the nature of the affection. Every body, I suppose, knows these facts. I have known them for years, and have been in the habit of teaching them for some years, and have verified them by the numerous cases treated in St. Thomas's Hospital. Yet I understand that a young gentleman was lately found fault with by the examiners at Apothecaries' Hall for having spoken the truth. Mr. David Unwin, a strictly moral, and exceedingly steady young man, has favoured me with the following particulars relating to the conduct of some of the examiners towards him. He was asked, what is guaiacum used for? "In cold or atonic rheumatism." "In what?" "In cold rheumatism." "I never heard of such a thing," said the examiner; "Nor I," said another sitting near, and laughing out; "perhaps you will tell us how often you have heard the term used; will you explain what you mean?" "Rheumatism is commonly divided into acute and chronic." "Ah! now I know what you mean, why did you not say chronic?" "Because rheumatism when chronic, may still be active, and require leeches, cupping, cold, &c., and guaiacum would be injurious; but if rheumatism is relieved by frictions, heat, &c., the guaiacum would be beneficial. This I call atonic, passive, or cold rheumatism." The person then who sat near him said he thought he got it from some old woman, for he never heard such a term. Here (said Dr. E.) Mr. Unwin showed his information. Every one should know that when rheumatism is chronic it may be active; the mere circumstance of it being chronic does not indicate its cold nature, and that it requires stimulants, as guaiacum. Chronic inflammation of the liver may be active, and as truly active as the acute. And so with rheumatism, whether it last for two or three days or for years. "He thought he got the term from some old woman." Now this, gen-

tlemen, is a personal insult; but I would not speak of it on that account. He was shewn a bark (cortex cordifolia). "What is it used for?" "As a tonic." "And what else?" "As a tonic astringent in atonic diarrhœa, or in gargles." "And what else?" "When it is used in agues it is called an antiperiodic." "That's its use; why could you not say so at once?" Now I can confidently assert that bark, at least quinine, for I now never use bark, is employed fifty times as a tonic to once as an antiperiodic, therefore he was quite right in speaking first of its tonic properties, and afterwards of it as an antiperiodic. "Why are quartan agues most difficult to cure?" "On account of their local complications; but I do not know that they are necessarily complicated," was the answer. "On account of the local complication, Sir, is the answer; you ought to have known that." Now by far the greater number of quartan agues, are more obstinate than either quotidians or tertians, independently of any local complications, and simply because they are quartans; they are certainly complicated sometimes, but it is a more chronic disease, having long intermission, and chronic diseases are in their nature more tedious to cure.

He was asked the symptoms of pneumonia. He said the most certain symptom was the crepitant rattle, heard by the stethoscope. "That's all very well to tell the extent of the disease afterwards; go on." "The cough is short, hard, metallic." "What are you talking about hard metallic; go on." "Sometimes there is a febrile state from the commencement, but it may come on insidiously, and exist at first without much febrile excitement, or scarcely any, unless it be combined with bronchitis or pleuritis, as it often is." "You appear to know little about it." "The pulse is hard, bounding, or oppressed; the sputum is distinct, round, and rusty from blood." He was then asked the treatment. "Copious and repeated bleeding, according to circumstances; if the disease still continued, I would either salivate, or give tartar emetic." "Who did you ever see salivate for pneumonia?" "Dr. Elliotson." "In what diseases is mercury most beneficially used?" "In diseases of serous membranes." "Certainly, and is that a serous membrane?" "No, but mercury is beneficial in all acute inflammations." "What dose would you give of tartar emetic?" "From one-sixteenth to six grains." "Whoever gave six grains?" "Laennec did, and I have seen Dr. Thomson give a similar dose." Now, gentlemen, it is very important to know that pneumonia often comes on insidiously, and here Mr. Unwin showed his knowledge of the subject. Pneumonia is often present when the practitioner is not aware of its existence; it comes on after operations, after severe accidents, and other diseases: the patient dies, and at the examination the lungs are found gorged with blood, a circumstance which was not suspected during life. This can only be found out by a practitioner who is accustomed to the use of the stethoscope. With respect to mercury, it is just as good in inflammation of mucous membranes as of serous membranes. I ask, is it not a fact that mercury is our best medicine in croup, and is not that a disease of a mucous membrane? and in bronchitis? When the examination was over, Mr. Unwin requested the favour to be allowed to leave sooner than usual, at the same time stating that he had been taking medicine for three months, for a scaly eruption on his hands, and that his bowels and head were in an unnatural state. Upon saying this, one person near him exclaimed, "Oh, secondary syphilis; you have been larking; eh?" The result was as he expected; after that gratuitons insult he was left to wait as usual. He was accused of having syphilis; the eruption was one of simple lepra, for which he had been taking dulcamara and arsenic, as I understood; but it was of an inflammatory nature, and I had recommended him to be bled, take mercury, and live low, and he is getting well. What a want of dignity in such conduct! There are some young men who are gay, and think nothing of such things, but there are others who are brought up in strict morality, and to these, such an accusation is the greatest insult that can be offered. Mr. Unwin's feelings, I assure you, gentlemen, were exceedingly hurt by that conduct, as the concluding remark of his communication show:—

"I solemnly declare that this is a faithful account of some parts of my examination. I will refer to Mr. Cribb, surgeon of Bambridge, for any information respecting my moral habits, with whom I have served my apprenticeship, and where I have attended medical lectures."

The next case is one of inflammatory dropsy. I have over and over again shown you that dropsy may occur independently of organic disease, or any local affection. Cases of inflammatory anas-

arca are exceedingly common. I have pointed out that they commonly arise from cold and wet, and the disease generally commences in the face, comes on suddenly; the urine is often not diminished. In this case it was copious, and natural to appearance. I do not care about the state of the urine. When I see that dropsy has come on suddenly, the pulse is strong, no signs of debility or organic diseases exist, then I know it is inflammatory.

Sometimes it is cured by low diet alone or by hydragogue purgatives, and sometimes by bleeding; this case was cured by bleeding. The patient was in the prime of life, and would bear bleeding very well. The blood was buffed and cupped, another proof of the inflammatory nature of the disease. Now, gentlemen, what are you to say, when asked by the examiners at the Hall the treatment of dropsy? Are you to state what you know to be truth or not? Here is an account of the examination of one of my pupils the other day, Mr. Jenner, upon this subject. On stating that he would deplete before giving stimulating diuretics in a case of inflammatory dropsy. The examiner (I shall not mention any names) asked how he would deplete? Bleed and purge, was the answer. "What! would you bleed in dropsy?" "Yes; Dr. Elliotson recommends bleeding in inflammatory anasarca, known by its having commonly arising from cold and wet, and the face swelling before any other part, the pulse hard and quick, and on examination some signs of inflammation are discovered in the head, chest, or abdomen." "Did you ever see any patients treated by bleeding?" "Yes; two or three."

(Mr. Jenner would have stated that he had seen many, but dared not say, as he informed me.)

"I am not here to teach you the practice of medicine, but to examine as to what you know; but I would advise you to look twice before you bleed once."

A person sitting at the side of the table said, "If he has seen two or three cases cured by bleeding, it was as many as he would ever see."

"I presume," said Dr. Elliotson, "he will see many such cases when he gets into practice. Now this is a very lamentable state of things. What are we to do as teachers? either I am unfit to teach, or they to examine. Things are come to a dead lock. It might be said, that I should have complained privately to the examiners; but as this is the conduct of a public and authorised body, in the execution of their public functions, I consider it right that these matters should be brought forward publicly. I consider that we, as teachers, have been insulted. Reformation can only be had by a public examination at the option of candidates. Many who are nervous will not like public examinations I know, and, therefore, it ought to be left to the choice of the candidate whether he will be examined publicly or privately. One of our best informed young men, Mr. George, was examined the other day, and he has written me the following particulars of his examination:—

"I was examined by Mr. ——, and two or three other gentlemen came and sat on the opposite side of the table: this they seemed to do less for the purpose of examining me than for that of saying 'Yes,' to questions asked by the gentleman examining, and throwing in occasional short phrases, such as, 'Very large dose, sir,' and discharging their small wit at the expense of the young man who was sitting under the foolish idea that his future prospects in life depended upon the issue of the present examination. I was asked how small doses of calomel acted upon the liver? I said by stimulating the mucous membrane at the orifice of the biliary duct, which stimulation was conveyed along the hepatic and biliary duct, and thence to the lobules of the liver, whereby they are excited to secrete an increased quantity of bile. 'The reply is so absurd that it only shows your ignorance of therapeutics, and of the abdominal circulation.' His companion at the same time made the acute and witty remark, that 'The gentleman had discovered the north-west passage to the liver.' After I had explained the abdominal circulation, the examiner then gave his explanation of the action of calomel, which was, that as it passed along the intestines, it stimulated the terminal branches of the exhalent arteries, and caused them to secrete a portion of the serum of the blood, which blood so altered in quality, was taken to the vena portæ, and thence to the liver, and caused to be secreted a superabundant quantity of bile." You now know what answer to give, gentlemen. This is quite as absurd an explanation as the first—if I were asked such a question, I should say I did not know. It is only vain and absurd to attempt to explain why calomel acts upon the liver, or why the salivary glands, &c.

We do not know why cantharides acts upon the bladder, and elaterium on the stomach and intestines. When the candidate in Moliere's *Malade Imaginaire*, was asked before the "Grandes Doctores doctrinæ," "De la Rhubarbe et du seûe," why opium made people sleep, he replied,

"Quia est in eo
Virtus dormitiva
Cujus est natura
Sensus assoupire."

This very properly gave such general satisfaction, that the assembly exclaimed,

"Dignus, dignus est intrare
In nostro docto corpore."

It is only substituting vague hypothesis for truth. He was asked what dose he would give cream of tartar in? "Two drachms with a scruple of jalap and ginger." "That's too large a dose, Sir." Whilst his companion expressed an opinion that "*he could get through any body's bowels* with two scruples or a drachm, and the quantity of jalap mentioned."

Now, gentlemen, dropsical patients frequently cannot be purged effectually with less than an ounce or more of cream of tartar. I have often been obliged to give an ounce and a half, two and even three ounces. There is no rule for doses, but their effects and non-effects; a good practitioner will never consider the size of his doses, but the effect they produce.

He was then asked:—What is the name of inflammation of the mucous membrane of the intestines?" "Really, Sir, I forgot the name, but allow me to give you the symptoms." "Certainly, Sir." The symptoms were described. "Well, Sir, you have omitted some of the most important symptoms." They were recapitulated, and I added, "that the pulse was quick, but neither so quick nor so hard as in inflammation of the serous membranes." "Well, Sir?" I said, I was not aware of any other important symptom." "The pain?" "There is very little pain usually, and that a pricking or a smarting pain." "No, Sir! the pain is very great, and at each evacuation; and the fæces, Sir, are there any?" "Certainly, Sir, but they are very watery." "No, Sir, they seldom appear, and when they do, they are in hard scybala." "You don't know Sir, said the Examiner, "that you are talking of dysentery." "No, Sir, I thought you asked me simply, inflammation of the mucous membrane of the intestines." "Well, Sir, dysentery is the same thing." "Now, dysentery," said Dr. E. "is by no means the same thing, there may be inflammation along the whole course of the intestines, and the symptom described by Mr. George, but in dysentery there is something besides inflammation; the fæces are retained, there is tenesmus, and the stools are mucous and perhaps bloody. Mr. George declares, that this is a true account of parts of his examination, he also gives the concluding remark of his Examiner. "Well, Sir, I will recommend you to the Court for your certificate, but cannot say you have done yourself any credit by the way you have obtained it. It is evident that you have spent your time in idleness, and probably in dissipation, and have now been learning a few things within the last few weeks. I would recommend you to go over every branch of your studies again." Mr. George, gentlemen, is a highly informed young man, last session he obtained the gold medal in my class, and his answers are admirable. They prove him to have a full acquaintance with the principles and practice of medicine. He has not lost a moment night or day, and has studied so hard that I was obliged to order leeches to his head, and implored him to sleep longer and study less. Some time since, I sent the answers of one of my gold medallists for insertion in the *Lancet*, as a specimen of the kind of answers, but they were too long to be inserted, however, the *Annals of Medicine* have inserted the first answer, (see last number;) they were admirable answers. "I do not give questions which may be answered from mere mechanical memory, but which give the candidate an opportunity of displaying his knowledge upon particular points. Now what is to be done under this state of things? I must teach the same thing again next winter. I cannot distort the facts which occur in the hospital. Some change or reformation must take place, if these statements are true, and let them be disproved. It is generally understood that our best pupils pass the worst examinations at the Hall, while those who only "grind" for a few weeks, and get up particular questions, are sure to receive the compliments of the Court.

THE ANATOMIST.

The spermatic chord is composed of the vas deferens, the spermatic arteries, veins and nerves, and absorbents; all of which are connected to each other by fine

cellular tissue, and are enveloped by a fascia and the cremaster muscle. The chord, thus formed, extends from the epididymis to the internal abdominal ring, where it constituents separate from each other.

Corpus pampiniforme, is the name given to the venous plexus, formed by the spermatic veins after these vessels have escaped from the testicles.

The vesiculæ seminales are two oblong flattened bodies situated at the interior fundus of the bladder, behind the prostate gland, and on the outer side of the vasa deferentia. Each seminal vesicle is about two inches long, and consists of a long tortuous membranous tube convoluted on itself, the small excretory duct of which joins its corresponding vas deferens.

The prostate gland is a flat conoidal body, the base being posterior corresponding to the vesiculæ seminales, the apex anterior corresponding to the vesical extremity of the urethra. It is distinguished into three lobes; two lateral, large and united in the medial line, their union being marked by a slight groove; and a third or small tube situated in the angle between the two lateral lobes, towards the base of the gland. The prostate gland is firm and resisting to the touch, and composed of numerous follicles, with minute ducts, which unite to form larger tubes, the openings of which, ten or twelve in number, are on the under surface of the urethra, on either side of the verumontanum.

Cowper's glands are two small oblong-round bodies, placed before the prostate gland (hence also called anti-prostate glands), and continued between the layers of the triangular ligament of the urethra. The duct of each gland having run a course of about an inch, opens into the urethra a little anterior to its bulb.

THE PENIS.

This organ, the shape of which is familiar, consists of two long cylindrical bodies, named corpora cavernosa, and a body named corpus spongiosum, which contains the urethra, all these parts being connected together and surrounded by the superficial fascia of the common integuments.

The corpora cavernosa, are two cylindrical bodies, united to each other in the mesial line; they are composed of a cellular structure, containing several veins and the arteries of the corpora cavernosa, derived from the pudic artery, all of which are enclosed in a strong fibrous investment.

Each *corpus cavernosum* commences by the *crus penis*, which is the narrowest part, and which is attached to the rami of the ischium and pubis. At the symphysis pubis both crura unite, forming the chief part of the body of the penis, and terminate anteriorly in an obtuse point, to which is intimately attached the glans penis.

Septum pectiniforme, a partition, imperfect as its name implies, which corresponds to the mesial line, and marks the division of the corpora cavernosa.

The urethra is a membranous canal, extending from the neck of the bladder to the extremity of the glans penis, its length and width varying according to the erect or collapsed state of the penis. In the latter condition its length is from seven to eight inches long, and its calibre about three or four lines. It is lined by mucous membrane, and is distinguished into, 1st, the prostatic portion which is from an inch and a quarter to an inch and a half in length: 2nd the membranous portion which is about half an inch long; 3rd. the bulbous portion which is scarcely an inch, and 4th. the spongy portion which occupies the remainder of its length.

The corpus spongiosum urethræ is a cellulo-vascular tube surrounding the urethra and occupying the under mesial line of union of the corpora cavernosa; it commences in the bulb of the urethra and extends along the canal to its extremity where it terminates in the glans penis, the bulb and glans penis being merely expansions of this structure.

Upon exposing the mucous surface of the urethra by an incision, we observe, 1st. a slit-like contraction at the orifice, 2nd. behind this a dilitation, called *fossa navicularis;* 3rd. the constant diameter of the canal until we arrive at the bulb where it is again dilated forming 4th. the *sinus of the bulb;* 5th. the narrowest part of the canal which corresponds to the membranous portion; 6th. the dilitation corresponding to prostate gland, and 7th. a contracted orifice at its termination in the bladder. In the prostatic portion of the urethra a prominent fold of mucous membrane, called *verumontanum* projects from its under surface, and presents in its centre a large lacuna, the *sinus pocularis*, the orifice of which is directed forwards. On either side of the verumontanum the prostatic sinuses are situated. Upon the upper surface of the

urethra, from the orifice to the bulb, are the openings of numerous mucous follicles, directed forwards, the largest of which is about an inch from the orifice and is called, from its size, lacuna magna. The ducts of the seminal glands already described in connection with the genito-urinary organs open on the under surface of the urethra. The orifices of Cowper's glands open a little anterior to the sinus of the bulb, the common ejaculatory ducts on either side of the verumontanum, and the ducts of the prostate in the prostatic sinuses.

The superficial fascia, which envelopes the penis, is derived from that of the abdomen, and terminates at the corona glandis. It is strong where it passes from the linea alba upon the dorsum of the penis, forming the suspensory ligament, but is exceedingly delicate and loose upon the body of the organ.

The skin of the penis is remarkably thin and loose, and extending for an indefinite length beyond the organ, is reflected inwards, and is utimately attached to the corona glandis; the loose fold thus formed is called the *prepuce*. From the corona glandis it is continued along the glans until it becomes identified with the mucous membrane of the orifice of the urethra, having first formed a fold which lies posterior and inferior to this opening, and is called *frœnum puputii*.

Glandulæ odoriferæ are a number of small sebaceous glands which surround the corona glandis, and which lie beneath the skin.

THE FEMALE ORGANS OF GENERATION.

The ovaries are two ovoidal bodies placed, one on either side of the womb, in the duplicatures of the peritoneum called the broad ligaments of the uterus. Each ovary, enveloped by a white fibrous membrane, consists of a pulpy brownish-grey substance, highly vascular, and containing from fifteen to twenty minute vesicles, each of which is composed of a thin membrane containing a viscid yellowish fluid; these are called the *Graafian vesicles*.

The Fallopinn tubes are the excretory ducts of the ovaries; each is about four inches in length and is contained in the broad ligament, one extremity being attached to the superior angle of the uterus into which it opens by a small orifice, (*orificium uterinum*), the other being free and surrounded by a fringed slip of peritoneum, (*corpus fimbriatum*), in the centre of which is the peritoneal aperture (*orificium superius.*)

The uterus is a hollow organ of a pyriform shape and is distinguished into the *fundus*, the *body*, and *cervix*. The fundus is superior and posterior and receives at either angle the fallopian tube: the body is intermediate between the fundus and the neck, the latter being inferior and anterior and surrounded by the vagina: at the extremity of the neck is a small elliptical opening surrounded by a thick margin, which from its resemblance to the mouth of a tench, has been called *os tencæ* as well as *os uteri*. The cavity of the uterus is small compared to the thickness of its walls, and is of a triangular shape; its superior and outer angles presenting the orifices of the fallopian tubes, the inferior angle presenting the os tencæ. The uterus is placed between the bladder and rectum.

The vagina is a membraneous vascular tube, extending from the neck of the uterus to the external outlet, where it is continuous with the surface. It is composed of mucous membrane surrounded by cellular tissue, a vascular network, and the sphincter vaginæ muscle; its length is about four inches, its breadth one, but being very distensible these measurements vary. Its mucous membrane is thrown into transverse rugæ on its anterior and posterior surface, and is studded with the orifices of numerous mucous follicles. The colour of the mucous membrane varies, at the external orifice being red, and of a grey and sometimes marbled colour as it approaches the uterus.

The mons veneris is a soft adipose eminence, situate on the upper and anterior part of the pubes, covered by common integument, which, in the adult, is thickly set wit hairs.

The vulva is the fissure extending from the mons veneris to the perineum.

Tha labia magna are large folds of the integuments which bound the vulva on either side, and unite below in a crescentic edge *(the fourchette.)*

The clitoris, a small oblong conical body, placed between the upper extremities of the labia. It consists of a structure similar to the corpus spongiosum urethræ in the males, and arises by two crura from the pubes; these unite to form its body, at the extremity of which is placed a red protuberance, called the *glans clitoridis*, over which is thrown a loose fold of integuments *(the prepuce.)*

Meatus urinanus is about half an inch below the clitoris.

Labia parva, or nymphæ, are two red crescentric folds of mucous membrane, enclosing numerous erectile vessels; they descend, one on each side, from the prepuce of the clitoris, and are lost about the centre of the vulva.

The Hymen, when it exists, is a crescentic fold of mucous membrane, surrounding the sides and inferior orifice of the vagina.

The caruncalæ myrtiformes are small reddish bodies surrounding the orifice of the vagina, and which are the remains of the hymen.

THE MAMMÆ

Are two in number, situated at the anterior and superior part of the thorax, and connected to the great pectoral mussles by a capsule of condensed cellular tissue. Each of these conglomerate glands of a hemispherical shape, consists of numerous acini, very small and united together so as to form lobules. From the acini proceed minute tubes, named lactiferous, these unite, forming larger ducts, all of which converge towards the root of the nipple, and expand into conical sacs from which smaller ducts proceed and open on the surface. The nipple is a conical process, surrounded by a brownish areola, and composed externally of the integuments, which are very thin, and internally of the lactiferous tubes, together with numerous blood-vessels, from which the nipple derives its property of occasional erection.

The London Medical

AND

Surgical Journal.

Saturday, August 19*th*, 1837.

THE GOWER STREET UNIVERSITY THAT WAS TO BE, BUT IS NOT TO BE.—THE APOTHECARIES' COMPANY AND DR. ELLIOTSON.

Nothing can exceed the terror and annoyance at present displayed by the Gower Street Joint Stock Company, at the disappointment of not having attained the power of granting degrees in medicine, which they most unblushingly assure students they actually possess; and also at having been opposed by the North London School of Medicine, and Sydenham College. The immediate effect of the first of these schools was, to lead to the change of name of the North London, to the University College Hospital. The renowned and notorious North London,—far-famed for spilling of blood, and for the performance of desperate operations declined everywhere else, but good theatrical exhibitions, well calculated to amaze and astound green-horned students, and to disgust and horrify every well-informed medical practitioner,—lost its fair name; "But what's in a name?" A vast deal. The name, University College Hospital, was intended to deceive medical students, and lead them to believe that the University College in Gower-street, is the New, or Metropolitan University at Somerset House, not King's College, however, in the Strand, which alone possesses the power of granting medical degrees in London. That is what is in this particular name. Yet to this hour do the authorities in Gower-street impose upon students, by assuring them that the University College has the power of granting the Degree of Doctor in Medicine. The name, University Hospital, is therefore not without a meaning, and there is something in that name.

The second effect of the establishment of the North London School of Medicine, and of the Sydenham College was, that the fees of the first being about one-third, and those of the second one-half those of the Gower-street School, *alias* the real Simon Pure, the New Metropolitan University, it was necessary to oppose the rival schools by enlarging the fee at the North London Hospital of the

old Pharmacopœia, *alias* University Hospital of the new. On this barefaced and shameful proceeding we animadverted in our last number, because the Governors of the North London, *alias* University Hospital, had offered their wares at less than half the price of the old and corrupt institutions, which was a laudable proceeding on their parts, but one by which they attracted a vast number of student's from other schools. As soon, however, as the two schools already mentioned were announced, their fees being so much less than those of the ultra-*liberal* institution in Gower-street, it was decreed that all students who did not pay the large and most exorbitant fee in London to the said *mock* liberal establishment, were to pay £10 more for hospital attendance than those students who had. The effect, however, of this sapient law will be the very reverse of what was intended to embarras the rival schools, and to enrich the Gower-street far-famed London University College, as will appear from the following facts:

The perpetual fee to the medical classes in the University College, is	£72	15	0
The hospital fee to College pupils	26	5	0
Perpetual fee at the North London School of Medicine	99	0	0
At Sydenham College . . .	35	0	0
	45	0	0

Thus the North London School is £37 10*s*., and the Sydenham College, £27 15*s*. less than the Gower-street College for the same course of education.

The great difference in amount of fees for the same amount of medical instruction, naturally induces many students, to whom money is an object, to pay a low fee instead of nearly treble the sum; but to correct this great evil, a sum of £10 more is exacted from each student who adopts this plan, by the liberals of Gower-street. Now this sum is insignificant, and will never draw students to the extravagantly dear school. But unless the Middlesex Staff be demented, they will at once lower their fee, as is rumoured, to that of the old North London, or University College Hospital, increase their pupils tenfold, and leave the Gower-street Hospital nearly deserted. The constant squabbles in the London University College, which led to the retirement of Professor Quain, and in some degree to the death of Dr. Turner, have given a fatal shake to the stability of that institution. Added to these, the scenes at the North London that was, the illiberal raising of the fees, the foolish and knavish change of the name to University College Hospital to deceive pupils, are powerful causes which must injure, if not destroy, an institution, ostensibly well devised, dupliciously established, and really a mockery of the boasted diffusion of knowledge system.

That some of the Professors are men of talent there is no doubt, but not a whit more talented or able instructors than in the various other schools of medicine in the metropolis. That their fees are exorbitant, like those of all the large schools, cannot be denied any one; and that their tergiversations and system of humbug are equal to those of the old corrupt institutions is now to manifest to be questioned. That the surgical operations at their hospital are more frequent than in larger charities is a statistical fact that must be admitted, and totally at variance with the modern and universally received axiom of all scientific surgeons, "the best surgeon is he who performs the fewest operations." The science of practical medicine may be estimated by referring to Dr. Elliotson, the Professor's able defence of it, against the Apothecaries Company Examiners, which will be found in ano

ther part of this day's Journal. That the Rhabarbarians are a century behind the present state of science is a fact, for not one of them, with the exception of Dr. Merriman, is known in the annals of science. Nevertheless it by no means follows, as one our correspondent's well observes in another of our pages, that their worships are to be satisfied with doses of half-ounces three times a day of carbonate of iron, half-ounce doses of hydriodate of potass, and other equally bold doctrines of our contemporary, Dr. Elliotson. We agree, however, fully with him, that the conduct of the said Rhabarbarians is too often rude, indecent, and tyrannical, of which we have been repeatedly assured by some of our own pupils. But this is to be expected from persons who become examiners on the sole ground of their having been members of the Company of Druggists in Blackfriars, and who, as mere traders, very seldom have received a liberal or gentleman-like, or even a good medical, education. Nevertheless, they are genenerally tolerably civil, except to the pupils of certain teachers or schools, whom they sometimes annoy, frighten, insult, and reject. We therefore fully agree with Dr. Elliotson that the present system of examination needs thorough reform, and that the Rhabarbarians deserve castigation for their conduct towards those who apply for their licence. Moreover, their insolence in expelling Mr. Ridout and Mr. Bacot from their board, on account of accepting the honourable offices of Senators in the New Metropolitan University, shows their animus towards that institution. They know full well that it will annihilate them in a short time, and hence their virtuous and Quixotic rage against it.

ENTOMOLOGICAL SOCIETY.

August 7, 1837.

Mr. Stephens, President, in the chair. Several persons were announced, amongst which was a programme of the ensuing meeting of the society for the cultivation of science in France, to be held at Metz.

Mr. Hope exhibited some coral beads, which had been perforated in all directions by the larvæ of a small species of Ptinus; and also some wood, perforated by the same. Mr. Raddon also exhibited some larvæ of the Caragena Cubicularis, the insect destructive to wheat ricks.

Mr. Bainbridge exhibited a singular moth in a state of monstrosity (Polia nebulosa), in which a fungus had grown out of the eye, which terminated in two projections. He had also some specimens of the Ybonemueda padella, a small moth which had been very injurious to an apple tree at Lambeth, the leaves having been almost destroyed by it, and in some instances altogether. The cocoons are formed inside the leaves, which soon become covered with the webs of the insects, and turn yellow. The webs are so strong that in many cases the young leaves cannot burst through, but many of the large leaved apples escape, and pear trees are rarely attacked. The same insect has been also very injurious in France, where the hedge-rows are much lower than in this country.

Mr. Yarrell exhibited the wood leopard moth, which had attacked a sycamore branch, explaining that the insect eats a hole in the interior, when it evidently turns round, as it is found with its head downwards.

Mr. Bowerbank exhibited some specimens of cork, which had been greatly injured by a species of Termestes. The vessel in which the cork was brought over to the docks had contained a cargo of horns, hoofs, and bones, from which they were produced. A great deal of injury had also been done to the masts, which, it was feared, would have to be replaced, and it was even apprehended that the vessel itself was destroyed. They had already commenced their ravages in two localities—Whitechapel and Saffrom-hill—where they attacked the posts in all directions, and were very common in Wapping. He suggested for their destruction essential oil of almonds, the vapour of which would probably be effectual. In one case the injury was so great

that a vessel was sunk for some time in order to exterminate them.

Mr. Westwood read an original letter from the celebrated Drury, dated July 1786, containing a notice of an entomological excursion, which was considered interesting, as exhibiting the state of entomological science at that time. He also read a paper on some individuals of the family of Pausidæ, in the cabinet of M. Bouquet, found at Senegal, and the Cape of Good Hope, and interesting as they exhibited the extensive geographical distribution of the species.

A description was read from Mr. Waterhouse of two new species of Coleoptera.

Mr. Westwood detailed at length the result of an entomological visit to Paris, and exhibited several interesting specimens which he had brought over from the collections of that place. One was a larva of the ant lion, and which he had kept alive by feeding it exclusively on flies. In some respects its habits differed from the accounts given by Latreille in the formation of its hole. This it makes in very fine sand, walking backwards with its hind legs, and thus excavating the sand, which falls upon it where it lays, completely hidden, with the exception of its two mandibles. He also exhibited a species of Coccinella, which is herbivorous and found on a species of Brionia; a new species of Haleroides, found on a Chelodonium, where the eggs are deposited in a circle on a white downey substance. The larvæ are covered with hair, and when they alight on any naked body, cause a great deal of irritation, which is produced by the hairs being all serrated, or like saws. There was also a species of Osmea, not known in England, which is found on stone walls, where it attaches itself so strongly that it can only be removed by a stone or hatched. The most interesting of all was now an insect, exciting at present a great discussion amongst Entomologists in France, the Bombyx Mori, or silk-worm, from its being subject to a disease called Muscadine. This is a parasite which gradually envelopes the whole body in a white fungus, and destroys the worm, commencing at the segments, whence it absorbs the fatty matter, and by which means much injury has been done in the silk-worm houses. The mischief is produced oy the explosion of a fungus, which is taken in at the spiracles or pores of the skin, as has been proved by M. Audoin, who has inoculated several worms and beetles with it. There was also a specimen of the Scolytus Pygmæus, and insect which attacks the oak, and which has latterly proved so injurious, that 80,000 trees in the Bois de Vincennes have been destroyed by it. This has in France, excited some discussion, it having, as in this country, been imagined to be produced by heat and other causes. A deal of the injury is produced by their cutting holes round the stems of the young branches, which causes them to fall down, even by a trifling wind. In conclusion, Mr. Westwood made some remarks on the progress of entomology in France, which he stated to be in advance of this country, there being more working cultivators, and the collection at the Jardin des Plantes, being greater than our own national collection. M. Audoin had recently delivered a course of fifty lectures on entomology, at the Jardins des Plantes, which were well attended, many ladies being present. To this establishment were connected five persons, devoted to entomology, whilst in the British Museum there was but one. The Society of Agriculture had just offered a very considerable sum, as a premium for the discovery of a means for preventing the attacks of Muscadine. He also mentioned the plan of M. Vallery for the destruction of the Calandra Granaria, in which the object was to give constant motion of the grain, in large cylinders made of metallic meshes, perpetually revolving, when the insect creeps through the small holes and falls to the ground.

The meeting adjourned to Sept. 4th.

ZOOLOGICAL SOCIETY.

August 8, 1837.

Richard Owen, Esq., F.L.S., in the chair. A letter was read from Mr. Harvey, corresponding member of Teignmouth, accompanying some preserved Radiatæ and fish from the Devonshire coast. Amongst the former was a Comagilla, a rare specimen, to obtain which he had dredged in five fathoms of water; the feelers and tubercles on the back being quite perfect, and the spawn on the feelers giving it a curious appearance. There was also a Tubularia Indivisa, the largest ever heard of, found in a pool of water at the recession of the tide, about twenty clusters being observed growing round its edges. This is one of the most beautiful of the Polophera, and is also found in the

river Dart. He however found it impossible to domesticate them as he had done with the Caryophilla, from not being able to imitate the action of the tide, and the specimens he obtained lived but two days. Some curious notices in natural history were appended, one of which was, the fact of seeing a carrion crow kill a duck, after having first drawn it out of the water, by trampling upon it; and other, having noticed a young cuckoo fed by a wryneck.

Mr. Ogleby described two new species of his new genus Chemas, which now consists of four, the Chamois of the Alps, the Chamois of the Himalayas, and the two in the room. It differed from the goat, by having a naked muzzle, and by the more singular fact of having four teats.

Mr. Gould described several birds from Mr. Darwin's collection. Of these were a raven, from California, very much like that of Europe, but differing in its elegant form, the tail, wing, and bill being longer, and the hue more beautiful, from which circumstance he named it Corvus Splendens. The others were two specimens of Ortyx, which he named O. Guttatus, from the spotted breast; and the Dendroceta, or wandering crow of authors, so called from its restless disposition, differing more particularly from the magpie in Arboreal feet, shorter tarsi, &c.

HISTORY OF THE ENTOMOLOGICAL SOCIETY.

The study of insects has always been a popular and interesting department of Natural History, and its votaries have early associated together for intercourse and the friendly communication of information The first society for the purpose was known under the name of the Aurelian Society, which was held at the Swan Tavern, in Change-alley: the date of its formation is unknown, and the laws and regulations of the society have not descended to us, but we learn that it existed in 1745. On the 25th of March, 1748, the great fire which happened in Cornhill burnt down the place of meeting, together with the society's valuable collection of insects and books with all their regalia. The society was even sitting at the time, yet so sudden and so rapid was the impetous course of the fire, that the flames beat against the windows before they could leave the room, and many of them left behind their hats and canes. This loss so much disheartened the members, that although they several times met for that purpose, they never could collect a sufficient number to form a society, so that for fourteen years there was no meeting. Another society under a similar name was established in the year 1762, arising, phœnix-like, out of the ashes of the old, and four years afterwards it was in existence, as appears from the fact, that in 1766 Mr. Moses Harris, a well-known Entomologist of that day, dedicated to it his work called *The Aurelian*, but we have no further accounts left of its progress.

In the year 1780 another society was established, called the Society of Entomologists of London, the minute book of which was carried down to the first week in August, 1782, at which time appears to have discontinued its sittings. The cabinet of two of its members, Mr. Tinly and Mr. Bently, were rich in Lepidoptera and Coleoptera. Another association called the Aurelian Society was proposed by the late Mr. Haworth, the author of *Lepidoptera Britannica*, under whose management it was carried on. The collection belonged to this distinguished entomologist, and was to be given up to the society as soon as it should consist of twenty members, which number it never reached. Its objects were to form a complete and standard cabinet of the entomological productions of Great Britain; to ascertain their names, uses, and distinctions, the places and the times of their appearance, food, economy, and peculiarities, and to point out to the public the readiest and most desirable method of destroying such as possess properties which are inimical to the welfare of mankind. Any person desirous of becoming a member of this society was to be approved by every member of the society at the time being; and was also required to give up one specimen of every species of his own collection which the cabinet in the society did not possess. The elected member was to receive in return, duplicate specimens from the society's collection, or money if he preferred it. By these means (observed the rules) the Aurelian cabinet must ultimately arrive at the standard of perfection, and the separate collection of every member of the society will gradually increase both in numbers and value. But unfortunately neither the society nor the collection ever attained perfection, as the former was dissolved in 1806, and the latter returned

to Mr. Haworth. The Entomological Society of London arose the same year out its ashes, and consisted of nearly the same members. No member was compelled to give up unique specimens to a general collection, but a small collection was formed, principally by the generosity of Mr. Haworth. This society made more progress than any of the preceding; it met regularly, and published three volumes of its transactions, the last of which appeared in 1812, after which the death of some members, and other defalcations, brought the society into considerable trouble, and the regular meetings were abandoned in the following year, 1813. The Entomological Society of Great Britain was formed out of its ruins, and was a non-subscribing society, lasting only two years, and then merging into the Zoological Club of the Linnæan Society of London.

An association for the prosecution of Entomology was again formed In 1825, under the title of Entomological club. This was also a non-subscribing society, consisting of eight members, with no power to increase the number. Since its establishment two vacancies have alone occurred, each of which was instantly filled up by the election of another member, and the club has continued to meet every month from the day of its establishment. In the winter of 1831-2, it was agreed at a meeting of the club to publish a "Quarterly Magazine," the management of which was undertaken by the members present, which was to be open impartially to all contributors, no preference being given to the members of the club. The first number of the work entitled, the *Entomological Magazine*, was published on the first of September, 1832, since which it has appeared every three months, with the utmost regularity, treating not only of Scientific Entomology, but devoting a large portion of its pages to the history of insects, as connected with agriculture aud horticulture.

The Entomological Society of London was formed in 1833, its first meeting being held on the 4th of November, at its rooms, at 17, Old Bond-street, where about fifty members assembled, the chair being first taken by J. G. Children, Esq., F.R.S., who proposed the election of the Rev. Mr. Kirby, the venerable patriarch of science and entomology, as President. Its first scientific meeting was held on the 2nd of December in the same year, and succeeding meetings have been held on the first Monday of every month from that period to the present. It has been much more extensive than any of its progenitors, the number of members in November 1834, amounting to 127, including most of the leading entomologists of the present day. Their transactions had also accumulated to such an extent that the first part was published in that month, embellished with seven plates, two other parts having subsequently appeared.

THE RIPENING OF FRUITS.

From the Gardener's Gazette.

A prize having been offered in the year 1821, by the French Academy of Sciences, for a proper elucidation of this important and highly interesting subject, three papers were received; one of which, written by M. Berard of Montpellier, gained the prize, and was afterwards published in the *Annales de Chimie*. M. Berard's memoir is exceedingly long and turgid; the following summary of useful facts is, therefore, presented to the readers of the *Gardener's Gazette*:—

Fruits do not act on the air in the same manner as leaves do: the results of the action of the former (both in light and darkness) are at every instant of their formation and growth, to suffer a loss of carbon; which, combining with the oxygen of the atmosphere, forms carbonic acid. *This loss of carbon is essential to the ripening of the fruit;* for, if the latter be placed in an atmosphere deprived of oxygen, the function of throwing out carbon will become suspended, the *ripening stopped*, and if the fruit remain attached to the tree or plant, it will dry up and *die*.

Fruits which ar enclosed in shells, however, may and do ripen; for the membranes which form the husk are naturally permeable to the air: indeed the communication between the external and internal air is so free, that both have always been found to be of uniform composition; that is, when analysed, the atmosphere within the shell has furnished the same relative quantities of oxpgen and nitrogen as the air we breathe.

When fruits separated from the tree (even though capable of completing their own ripening) are placed in atmospheres or media deprived of oxygen, they will not ripen: the power of ripening, however, in such case, is only *suspended*, and may be induced to act, or be re-esta-

blished, by placing the fruit in an atmosphere capable of taking carbon from it. If the fruit, however, remain too long in the de-oxygenated situation, it will have lost the power of ripening: even although it preserve nearly the same external appearance.

From these facts the inference is plain, but highly important, viz., that most fruits, and especially those which do not require to remain long on their parent trees, may be preserved for a considerable time; and thus their utility and the pleasure which they afford be prolonged. The most simple process consists in forming a paste of lime, sulphate of iron and water, placing the same at the bottoms of glass or stone bottles, or jars, and then introducing the fruit pulled a few days before it would otherwise have become ripe. Such fruits, however, are to be kept from the bottoms of the bottles or other vessels, and as much as possible from the other: at the same time care must be taken to close each bottle or jar with proper corks and cement, either with or without bladders or tin covers, according to circumstances. Persons at all acquainted with chemistry, will perceive that fruits thus placed are situate in an atmosphere entirely freed from oxygen (which has been absorbed by the paste) and, consequently, that they may be preserved for a longer or shorter space of time, according to their nature:—peaches, apricots, prunes, and several species of plums, from *twenty days to a month*;—pears and apples for full *three months*.—If either of these fruits be withdrawn from their confinement, after their respective periods and be exposed to the air, they will ripen extremely well; but if these periods be much exceeded they will undergo partial alteration and will not ripen at all.

It is well known that when ripe fruit is long exposed to the air, it will rot and decay; in such cases the fruit first changes the oxygen of the surrounding air into carbonic acid gas; and then the same gas is evolved from its own substance in large quantity. Indeed, the presence of oxygen gas is necessary to the rotting or decay of fruits; for, when it is absent a different change takes place. When the fruit cannot ripen except on the tree, its ripening is not caused by any chemical change of its substance, whilst still *green*; but by the change or addition of *new substances* furnished to it by the capillary vessels of its parent stem; and it is a remarkable and well ascertained fact, that *when fruits appear to have lost the acid taste and qualities which they possessed in their unripe state, it is because that taste is hidden by the large quantity of sugar they have received during the progress of ripening.*

In those fruits which ripen *after separativn* from the tree, likewise, the quantity of sugar is found considerably to increase: in such cases, however, it must be formed at the *expense of the substances previously composing the fruit. Gum, lignin, and water*, are the only substances present; the proportions of which diminish during the process: it is, therefore, natural for us to conclude, that it is those portions of these substances which have *disappeared*, that have been converted into sugar; and as the *lignin* contains the greatest quantity of carbon, we must conclude that it is from it, the oxygen takes the carbon in order to form carbonic acid,—a change so essential in the ripening of fruits.

It is difficult to suppose that in those fruits which ripen early on the tree, *all the sugar* should be sent into the fruit from the plant; it is much more probable that the substance of the fruit acts upon the air—or *vice versa*,—and thereby forms sugar, like those fruits which have been separated from their parent stems; but not in sufficiently large quantity to render them *identical in quality*. In such cases, it is necessary, that recourse should be had to the tree itself, to complete the process of ripening.

In conclusion, it remains to be stated, that the alteration which the *lignin* undergoes during the process of ripening, or *saccharification*, continues during the decay of the fruit, under any circumstances. During the process of decay, the *lignin* becomes brown, and its decomposition, as well as that of the gum and the water, occaasions the formation of comparatively large volumes of carbonic acid gas. The sugar, also, (if any exist) becomes decomposed at this time; and, to its *disappearance*, in a great measure, is to be attributed the peculiar taste of decayed or rotten fruits. The sugar, during its decomposition, likewise, doubtless gives rise to the formation of carbonic acid; a great part of which, combining with the hydrogen evolved from the decomposing water, forms *carburetted hydrogen*, which is the main source of that ill or miassmatic taste and smell, so characteristic of vegetable putridity.—C. Mackenzie.

SITTING OF THE FRENCH INSTITUTE OF THE 31st OF JULY.

Monsieur Savart, Dulong, Becquerel, and Blainville, were appointed a committee to examine the essays for the great prize on physics. The problem to be resolved is, to determine, by anatomical and physiological research, what is the mechanism of sound in those animals which are capable of producing it.

Agricultural Economy.—*Ravages of Insects that destroy the Vine.*—It will be remembered that the academy nominated, at its last sitting, a commission to repair to Argenteuil, and examine into the disasters caused there by a species of insect which destroys the vines. Messrs. Dumeril and A. Hilaire visited the place, and went over an extent of ground of a league in length, and half a league in breadth. All the vines which covered this space were entirely destitute of leaves and grapes, and nothing is to be seen but vine props supporting blackened stalks that are almost in a state of atrophy, owing to several sorts of insects, among which the first place must be assigned to the pyralis, of which Monsieur Duméril presents the Institute with specimens of the caterpiller, chrysalis, butterfly and egg. The presence of all these metamorphoses, and, above all, the deposit of eggs on the leaves of the vine, indicate that the pyralis is continually reproduced, and that in consequence it would be difficult to destroy it with fire, as is generally done with other insects. Monsieur Duméril gave notice of his intention of concerting with his colleagues MM. St. Hilaire and Dumas, on the means of preventing the return of this scourge.

Meteorology.—*Falling Stars in the Mauritius.*—Monsieur Louis Robert, who has for a long time inhabited the Mauritius, and occupied himself with meteorology and astronomy, addresses from a journal kept in that country an extract relating to shooting stars. The coincidence between the appearance of these luminous bodies in an isle of torrid zone and those which have been observed at the same time over a great part Europe, is not without interest. Towards 3 o'clock in the morning of the 13th November, 1832, during calm and somewhat cloudy weather, there was seen, from all parts of the heavens where there were not clouds, and especially towards the zenith, at some degrees to the south, a great variety of shooting stars, which traversed the heavens in all directions. The number was so great that it was impossible to count them. Their courses were not in straight lines, as those of shooting stars generally are, but they described all sorts of curves in the sky. This phenomenn was at its height abount four in the morning. A little before the rising of the sun, but few of these meteors were to be seen. The mercury of the barometer was at its usual height, and the thermometer of Réaumur was two degrees lower than for some days preceding.

Organic Chemistry.—*Researches on Sulpho-naphtalic Acid.* A paper by Monsieur Regnault.—In 1836 Mr. Faraday had obtained two isomeric acids by heating ordinary concentrated sulphuric acid and naphtaline. According to this chemist, both ought to be composed of one atom of naphtaline and of two atoms of sulphuric acid. Messieurs Liebig and Wohler, having employed anhydrous sulphuric acid, obtained only one acid, resembling, in composition, the two acids of Mr. Faraday, which, combined with baryta, gives a soluble salt. Monsieur Regnault having repeated in his turn these experiments, obtained only a soluble salt, after heating the sulphuric acid and the naphtaline to seventy or eighty degrees. His sulpho-naphtalic acid is soluble in water and alcohol, and forms, by evaporation, a crystalline deliquescent mass. Its taste is highly acid and metallic. Submitted to the action of heat, it melts between eighty-five and ninety degrees, and is decomposed at about 120 degrees. It is composed of twenty atoms of carbon, twenty of hydrogen, eight of oxygen, and two of sulphur. The sulpho-naphtalate of baryta is composed of one atom of baryta, two atoms of sulphur, five atoms of oxygen, twenty atoms of carbon, and fourteen atoms of hydrogen, which correspond to one atom of hydro-sulphuric acid, and two atoms of naphtaline, having lost an atom of hydrogen, which has combined with the atom of oxygen of the sulphuric acid to form water.

Paleontology.—Monsieur Geoffroy St. Hilaire gives in a paper "On the changes produced at the surface of the earth," and which appear to depend originally and necessarily on the pre-existent, incessant, slow, and successive variation of different and consecutive ambient mediums of the terrestrial globe.

DR. ELLIOTSON'S ATTACK

ON THE

SOCIETY OF APOTHECARIES.

To the Editors of the London Medical and Surgical Journal.

Gentlemen,—I trust to your well known impartiality and love of justice to give insertion to the following observations. In the Lancet of last week is a long report of part of a clinical lecture delivered by Dr. Elliotson and headed, "SPECIMENS OF THE MANNER IN WHICH THE MEDICAL STUDENTS ARE EXAMINED AT APOTHECARIES HALL; WITH COMMENTS, BY DR. ELLIOTSON. The arrogant and self-sufficient manner in which Dr. Elliotson thrusts himself, at this *particular season*, before the public, cannot but create feelings of disgust and contempt in the minds of every rational member and student in the profession.

The two-fold object Dr. Elliotson evidently has in his rash and shallow charges against the Worshipful Company of Apothecaries is very apparent. First, He wishes to make an impression on the members of the New Metropolitan University at the expense of the Apothecaries Company; and second, finding that the Medical session is fast approaching, the *experimental professor of the practice of physic in the falling and jobbing school of Gower Street*, feels that a good part of his income, which he has been in the habit of deriving from the pupils of the University College, will be materially diminished by the presence of Dr. Ryan and Dr. Marshall Hall, who are to lecture next session in the immediate vicinity of Gower Street; the former at the North London School of Medicine, the latter at Sydenham College. In order then to bring himself before the public in the capacity of a moral, conscientious, able, and indefatigable teacher, Dr. Elliotson with a hope of catching the malcontents amongst the medical students on their arrival in town next October, puffs himself off at the expense of the Apothecaries Company, trumpeting forth to the country, "I am DR. ELLIOTSON, the professor of the practice of medicine of University College, I INVITE (?) you all to see MY practice, for "I am sir oracle, and when I speak let no dog bark!" Justice shall be done you! and notwithstanding all the grievances we have received at the hands of the Apothecaries "I must, NEXT WINTER, go on teaching as I did the last!" The speaker should have added "and I shall be happy to receive your fee for attendance on my discourses, which is only £9 perpetual.

Gentlemen, although I admit that much reform is required at Apothecaries Hall, particularly in the method of examination, yet I must say that the ipse dixit of any public or private lecturer should not be taken by any court of examiners as a proof of the candidates abilities and pretensions to practice, and much less the ipse dixit of so young a man, both in practice and years, as Dr. Elliotson. Young aspirants in general are led away by novelty, and to gain notoriety usually deviate from the safer paths of practice which older heads cautiously follow.

"Fools rush in where angels fear to tread."

Suppose, for instance, the Apothecaries Company had asked the *abstemious* Mr. David Unwin, the *timid* Mr. Jenner, or the *extraordinarily industrious* Mr. George,

Pray Sir, what is the dose of the carbonate of iron!? or what dose of creosote would you administer!!? or what shape blister would you apply to the organ of philoprogenitiveness in the case of a working man who had too large a family!!!? or what are the diseases in which animal magnetism is of use!!!? or what is the dose of spiders web in intermittents. What would have been the answers of Dr. Elliotson's pupils? "I pause for a reply!"

I am Gentlemen,
your constant reader,
A LOVER OF MY PROFESSION.

REVIEWS.

A Clinical Treatise on the Endemic Fevers of the West Indies, intended as a Guide for the Young Practitioner in those Countries. By J. Evans, Esq. M.R.C.S. London: J. Churchill, 8vo. pp. 309, 1837.

The great importance of this work induces us to notice it very fully for the information of all interested in the study of the formidable diseases of which it treats.

The author continues his account of Malaria as follows:—

"These vapours are clearly heavier than the atmosphere; they always travel upon the ground. and are incapable of rising to

any considerable height, perpendicularly, though they are found travelling up hills of moderate elevation, the ascent of which is very gradual; and this holds good, from whatsoever source they may have arisen. Whilst excavations were making at the Cimetiere des Innocens at Paris, this poison was found in the cellars of some of the neighbouring houses, in such quantities, mixed up with other gases, as to produce asphyxia in those exposed to them; and of those who recovered from the first effects, many died from malignant fevers produced by its absorption into the body.

"Though we must come to the conclusion, that we know nothing of the nature of this poison, we must not, on that account, deny its existence, nor its identity in every case, from whatever source it may have risen. When we study its physiological effects on man, or some of the lower animals, we shall still farther be convinced of this truth, that in no respect does it present any other difference than that of intensity, or perhaps some slight modifications arising from its source, its producing causes, and the substances with which it may in different cases be combined."

Our author next proceeds to explain the physiological effects of malaria, and his remarks will be perused with interest and instruction.

"This subject may be divided into two heads. First, the effects of marsh effluvia expanded through the atmosphere on the mass of an acclimated population. Secondly, the effects produced on individuals by this poison in a concentrated form.

Effects of Malaria on an Acclimated Population.

"These effects are not the same in all countries, for each climate has its own temperature, and other causes which powerfully influence those of malaria The people of Holland have not the same character and appearance as those near Rome; nor do the latter resemble altogether the inhabitants of St. Lucia.

"The inhabitants of marshy countries, where the temperature is moderate, present the following appearances:—The skin is pale, livid, or yellow, the eyes dull and heavy, the movements of the body slow and languid, the eyelids and face puffy and somewhat swollen, or shrunk and wrinkled at an age when they ought not to be; the abdomen large, the extremities small, shrunk, and wanting consistence in the muscles; the sensation both of pleasure and pain seem deadened; common events produce little effect, exciting neither joy nor sorrow. They present the lymphatic, or, as it was formerly called, the leuco-phlegmatic temperament, in its greatest developement. Cadaveric inspection shows us chronic engorgements or morbid changes of structure in some or all of the viscera. Acute inflammations are rare, but living in an unwholesome atmosphere, they never enjoy health; they are always valetudinarians. How can it be otherwise, attacked as they so frequently are by intermittent or remittant fevers, which though so slight as to be treated by the unfortunate beings who have served a long apprenticeship to suffering, with indifference, nevertheless ultimately produce premature old age and death? They suffer from neuralgic affections; sciatica and tic-doloureux are common; their blood is thin and watery, giving rise to ulcers of the legs and scurvy.

"As we approach the tropics, though the lymphatic temperament still obtains, we find it combined with a greater excitability of the nervous system; and within these regions are added irratibility of the skin and of the abdominal viscera. There is a strange mixture of indolence and love of excitement: a wish to be roused from the listlessness of every-day life, but requiring a powerful stimulus to effect it. Slight causes produce affections of the nervous system which terminate in death. Colic, followed by paralysis of some part of the body, is common; and hysteria and other diseases of this class are frequently combined with the ordinary disorders of the country. We can account for this only by admitting a peculiar modification of the ordinary morbific agents, or a peculiar idiosyncrasy in the people.

"When acclimated individuals are exposed to the emanation from marsh in a more contrated form, or in a greater quantity than their powers are capable of resisting, they are attacked by the same diseases as the unacclimated.

"Differences in the manner of, and situation in life, influence the temperament of the inhabitants, and consequently their diseases. The population of St. Lucia consists of English, French, Creoles of both white and mixed races, and negroes. The better classes, who live well, drinking good old wine and eating food both nourishing and easily digested, preserve a temperament more or less

sanguineous; and though occasionally attacked with fever or affections of the abdominal organs, are not subject to those chronic engorgements of the viscera which I have mentioned. Some of the poorer French or their descendents, white or coloured, who are badly fed and naturally abstemious in their mode of living, taking only small quantities of an inferior red wine mixed with water, present examples of a developed lymphatic temperament, and their diseases are of that class. Dram-drinkers of all races are subject to organic lesions of different viscera in a chronic form, and to derangements of the nervous system; they are liable to fevers, and when attacked generally sink under a train of ataxic symptoms.

"An English gentleman of a sanguineous temperament married a French lady. He was attacked with a mild intermittent, which was cured by diet and demulcent drinks. Fancying that his former method of life produced his disease, he determined upon living very abstemiously for the future, and his resolution was strengthened by the advice of his wife and her family. Madeira was exchanged for a common poor French wine, which he took diluted in large quantities of water; animal food, for the indigestible vegetables of the country, and a small proportion of fish. This system was continued for some time, until his abdomen and fat began to swell; to combat which he discontinued his wine, took large quantities of tisannes, several clysters, and a smart purge twice a week. In about a month he came up to town, and I saw him with my friend Dr. Drivon, when he presented the following appearances:—Anasarca from head to foot, effusion into the cavity of the peritoneum. He was sitting up, his back supported by a chair, the body bent slightly forward; his breathing, short and rapid, consisting of a succession of gaspings for air, could not be performed in any other position. Percussion of the chest impossible, from the immense effusion into the cellular tissue; neither the pulse at the wrist nor the stroke at the heart could be felt, for a similar reason. By change of diet this patient recovered and returned to England, where I lately saw him in rude health, and effectually cured of tisannes and abstinence.

"By abstinence from a sufficient quantity of nutritious food and a moderate allowance of good wine, instead of dropsy we occasionally find that some painful neuralgic affection arises, and is only made to subside by returning to the former manner of life.

"Dr. Levacher, in his "Guide Medical des Antilles," describes a peculiar kind of dysentery occurring in negroes or other people who have passed their lives in the neighbourhood of marshes, which he denominates, from its combination with other symptoms, "*scorbutic.*" It may be added that where these dysenteric symptoms are not found, others arising from the same cause occupy their place.

We are next informed of the effects of malaria in a more concentrated form on individuals, and cases are given in illustration which abound with interest.

"Two ways of examining this subject present themselves to us; the first by observing its effects upon men and animals exposed to its influence; the second by experiments made on those animals which, like man, suffer from these emanations.

"An European, or a native, after a long residence in a temperate and healthy climate, arriving in St. Lucia, complains of a feeling of weight in the atmosphere,—a something which resists the wish for exertion or exercise. Both his mind and body are oppressed; his intellect is clouded; his spirits are low and desponding, and all pre-existing love of enterprize vanishes. If his residence be protracted he has slight febrile movements, which come on regularly or irregularly, not sufficiently severe to prevent him pursuing his usual avocations, but which, nevertheless, are sufficient to induce him to throw himself upon a sofa, and require a powerful effort of resolution to combat. In this manner his body may gradually accommodate itself to the climate, but he may consider himself fortunate if he escape so easily; in general, particularly if he be guilty of any imprudences, he feels restless at night, and can only sleep during the cool of the morning; he feels out of sorts; has pains in the back and extremities, as if from fatigue; he complains of head-ache, sickness, and nausea; and if these symptoms are not attended to immediately, suffers what is vulgarly called an attack of seasoning fever.

"When the constitution is affected by malaria in a still more powerful manner, the effects are often immediate, and I will describe them as they occurred to myself. I had occasion to visit an estate in the neighbourhood of Castries about midnight, and my road obliged me to pass the swamp which lies to the north of the town. There was a lovely moonlight,

the sky was unclouded, and a heavy dew was falling. On approaching the swamp I was sensible of an extremely disagreeable odour, arising from its emanations, and from the dank and foul vegetation on its surface and in its neighbourhood. I then perceived a peculiarly unpleasant, but indiscribable taste in my mouth and pharynx, which produced slight vertigo, nausea, and even efforts to vomit. On my arrival at the estate, which was shortly afterwards, I took a glass of hot punch, with the hope that it would allay the nausea; I was, however, mistaken, for it was immediately rejected, and an ague came on, which obliged me to go to bed, where I remained until the afternoon of the following day. After a profused perspiration I was enabled to ride to town, though still very unwell. At night the symptoms returned with such severity as to require a bleeding from the arm and leeches to the epigastrium; by these means the paroxysm subsided eighteen hours after its commencement, and a return was prevented by the free use of the sulphate of quinine. Both before and since I have passed this swamp at all hours without inconvenience, except from the unpleasant smell which always existed. I have also twice passed the Pontine Marshes at night, at a time when fever was raging in the Campagna, in Rome, Velletri, and Terracina; the only effect I could perceive was a slight odour, not unlike champagne.

"The two following cases was related to me by my friend Dr. Chevalier, of Martinique, but who at the time they occurred was practising in St. Lucia:—About eight o'clock in the evening two boatmen, after finishing their day's work, before returning home, were occupied in hauling their canoe high up on the beach, close to the most dangerous part of the swamp mentioned above, when they perceived immediately to windward a small cloud of vapour gradually approaching them, and in a short time they were enveloped in it. One of them fell down, apparently in a state of asphyxia, and the other, was so affected as to be unable to render him any assistance. The vapour passed away quickly, and the one who had been the least incommoded recovered sufficiently to look after his companion, whom he found lying in the mud, apparently insensible. He continued in this state only a short time, and gradually became sufficiently well to be led home. In the course of the night Dr. Chevalier was called to see him, and found him suffering from an intense ague. The surface of the body was cold, the countenance expressed great anxiety, the pulse was small and scarcely perceptible, the patient was insensible to surrounding objects, and in a state of coma, only interrupted by severe convulsions. The cold stage continued altogether about three hours, and as reaction took place the convulsions subsided; but the coma continued, and alternated with delirium. There was occasional vomiting of mucosities with great effort and apparent pain. Pressure on the epigastrium made the patient wince and contort his countenance. About eighteen hours from the commencement there was remission, or rather a slight mitigation of symptoms, with a partial return of consciousness; it continued only a very short time, and was followed by another paroxysm, equal in violence to the last, except that the cold stage was scarcely perceptible. The patient died about forty hours from the period of exposure. The body was examined whilst warm; the blood was found fluid, and a small quantity of troubled serum was effused between the arachnoid and pia-mater on the surface; the lungs were somewhat engorged, and the stomach intensely enflamed, containing about two or three ounces of blood in its cavity.

"The other man never suffered inconvenience; he said that the vapour had no perceptible smell; that it was warm and moist, like steam, stopped the respiration for a moment, and produced a sense of faintness and trembling of the whole body.

"In the year 1826, a schooner put into St. Lucia, with three men ill, out of a crew of four men and a boy; two of them were dangerously ill with all the symptoms of yellow fever, and one died; the third suffered from a gastro-enteritis of a mild form and remittent type. They were attacked two days previously to their arrival. The vessel was from Bermuda, loaded with onions, most of which were rotten, and emitted an insupportable smell.

"Mr. Taylor, after the hurricane of 1817, being then harbour-master of the port of Castries, contracted with the agent for Lloyd's to get afloat a vessel which had been thrown high up among the mangrove bushes, to the north-east of the town As she lay fifty or sixty yards from the water's edge, even at the highest tide, this object could only be accomplished by cutting a canal from the vessel to the carenage. The appearance of the swamp as evinced by the canal, I have already described;

it remains for me now to mention the effects produced upon the workmen, which I shall do, as near as my memory will allow me, in the words of Mr. Taylor himself. A number of negroes were employed at the commencement, but they abandoned the work to a man, declaring that they could not support the stench. As there were several foreigners in the town at the time, eighteen of these were engaged being principally Spaniards and Portuguese, but the undertaking was abandoned, when nearly two-thirds finished, for want of hands. The men fell ill day after day, and the greater part of them died; they first complained of faintness and vertigo, then the feet and legs began to swell and be inflamed, and the swelling and inflammation quickly extended above the knee; fever came on, and death ensued in two or three days."

A Treatise on Painful and Nervous Diseases, and on a New Mode of Treatment for Diseases of the Eye and Ear. By A. TURNBULL, M. D. Third Edition. London, 1837.

The fact of this work having now reached a third edition in so short a time from its first appearance, is no inconsiderable argument in proof of its merits. The subject of which it treats is one involved in so much obscurity, that any light which can be thrown on it, cannot fail to be received with gratitude by the profession. The inductive method adopted by our author, and to which the modern improvements, as well in medicine as in the other departments of knowledge, are, in a great measure, to be referred, induce us, *a priori*, to judge favourably of the merits of the book. Perhaps it might look like hypercriticism, were we to object to certain abstraction introduced into the very first page, such for instance, as "disordered state of the nerves." Such abstractions involve hypothesis, and hypothesis, when gratuitous, has ever proved to be the bane of science, and is totally at variance with the inductive method of proceeding. We do not like to hear of such a thing as "Communicating a healthy action to the nervous system,"—to us it appears to be neither more nor less than nonsense. These little blemishes, as we at least are disposed to consider them, we regret the more, as by their appearing at the very commencement of the book, they may be calculated to disparage its merits, and to make an unfavourable impression on the reader's mind.

In the former editions the author confined his observations to the use of Veratria; in the present, he has submitted to the public his experience of the powers of Delphinia and Aconitine. He gives the following account of the way in which he first became acquainted with the powers of Veratria in the case of tic douloureux, and other nervous diseases. We shall give it in his own words:—"My general habit is to make experiments upon healthy persons. I rubbed upon my arm for a few minutes, an ointment consisting of two grains of veratria and a drachm of lard, which caused great heat and tingling. At these sensations I was much astonished, and expected either redness of the skin, vesication, or eruption to follow, but to my great surprise nothing of the kind took place. The ointment was washed off with soap and warm water, which increased the heat and tingling: about an hour afterwards these were followed by an agreeable cool sensation. Finding no injury to my health from it, I repeated the application upon the arm, when a sensation, similar to that produced by electricity or galvanism, ensued; and on passing my finger rapidly over the part, an electric feeling followed its tract. These new sensations immediately attracted my attention, and their long continuance and powerful impression on the nerves of sensation, without redness, blistering, or destructive action being produced upon the skin, led to the idea, that I might, with safety, try the veratria externally in nervous diseases."

Our author employs the term *electro-stimulation*, to express this combination of heat and tingling, or electric-like feelings, and any substance producing these sensations he calls *electro-stimulant*.

Chap. I, treats of the *external application of veratria in tic douloureux*. Veratria may be used in the form of ointment, embrocation, or plaster. He lays great stress on the necessity of attending to the directions given for using it. The hand he directs to be kept moist with the application, and it should be moved with considerable speed, but not lightly. The time during which it should be used cannot, he says, be defined, "as it must be continued until as much electro-stimulation has been produced, as shall be sufficient to remove the paroxysm." By which we suppose the author means to say, that it must be continued as long as any pain continues to be felt—we like plain English. He recommends the substance to be used twice a day as long as

the disease continues, and then for a week after the cessation of the paroxysms, and afterwards to be gradually discontiuued; and if the intervals of the paroxysms are not lengthened after the application has been continued four or five days, it should be increased in strength, or changed for another alkaloid, "as a repetition of the same application daily, without lengthening the intervals. soon fails to cure the disease." We do not half like the reason assigned by our author for changing the alkaloid and substituting another; however, who can know better than the doctor? He states facts, of course, and facts are stubborn things.

The expense of purchasing veratria for external use, induced our auther to institute experiments in order to ascertain whether it might not, with safety, be administered internally. In the first experiment instituted for this purpose, he gave a guinea-pig half a grain of veratria, which, he tells us, "had no apparent effect, except producing an uneasy sensation about the mouth and throat, but there was no evacuation from the bowels." Its not acting on the bowels was a thing that any ordinary person might see; but to be able to ascertain the fact of its producing "an uneasy sensation about the mouth and throat," required an observer of no ordinary acumen.

Our author cautions us against giving the veratria in a liquid form, in consequence of the acid and insupportable sensation which its solution produces on the mouth and pharynx. Dr. Turnbull here takes occasion to question the correctness of Magendie's opinion with respect to the action of veratria. Mr. Magendie asserts in his formulary that veratria is principally serviceable in cases where it is desirable to effect a prompt evacuation of the bowels, whilst he, on the contrary, uses it to stop diarrhœa, and that with decided advahtage. Had the doctor reflected for a moment, we feel inclined to think that he would soon see the discrepancy between him and Magendie was more apparent than real, and that, according to the Homeopathic doctrine, in which some truth may be found amidst a great quantity of rubbish, a medicine whose primary effect was purgative, may be advantageously and successfully employed to check diarrhœa. With respect to the circumstance of a sluggish state of the bowels being induced by the internal use of veratria for some days, it not only does not militate against Magendie, or for the doctor, but it has quite the contrary effect. The doctor remembers the old adage "after a storm comes a calm."

In the next part of his work, the doctor cites several cases to show the efficacy of veratria in tic doloureux; we shall present our readers with an analytical selection of the most important of those cases;—

Case 1.—A lady, fifty years of age, has been affected for the last thirty-six years with tic doloureux in the cheek, and in the forehead above the eye-brow, on the left side. From the commencement she has had a paroxysm generally once a week. and at no time does she remember the interval to have been greater than fourteen days. Her sufferings during the continuance of the attack have been extreme, and have compelled her to confine herself to bed until its termination, and it has never lasted a longer time than two days. In the intervals, however, she has been perfectly free from pain, and her general health has been tolerably good.

She had a paralytic affection of the levator muscle of the upper eye-lid, and of the left side of the face. Morphia, strychnine, and other means had been used to a great extent, but without any other effect than to induce debility. She was directed to rub over the forehead and side of the face an ointment made of twenty grains of veratria to an ounce of lard, till every uneasy sensation was gone. In about fifteen minutes this effect was produced: but the paroxysm made its appearance within two hours, and by a renewal of the friction for a few minutes, it was extinguished instead of continuing two days as usual. After this there was an interval of perfect ease for ten days, when the attack returned, but not violently. On this occasion the same plan was pursued as in the preceding paroxysm. From this time the patient had only one or two very slight accessions, which were cut short by the use of the ointment for a few minutes, and the disease entirely left her.

The disappearance of the paralysis simultaneously with the tic doloureux, is not the least remarkable feature in this case.

Case 5.—A lady, twenty-five years of age, had been labouring under tic doloureux for the last seven years, the site of which was the right supra orbitary foramen. The duration of the paroxysms was from sixteen hours to two days, and the intervals from ten days to three weeks, but when a paroxysm came on in a shorter time, it has generally, in two or three days been followed by another.

Small doses of acetate of morphia had been giving during the paroxysm, which sometimes caused it to cease immediately; if however this effect was not produced, all the symptoms became worse. Purgatives, and, subsequently large doses of carbonate of iron, were then prescribed, without any benefit, when the veratria was commenced. At the commencement at one of the accessions, she rubbed over the eye-brow and forehead of the affected side, an ointment made with twenty grains of veratria to an ounce of lard; and after the friction had been continued for about twenty minutes, the paroxysm was cut short. During the interval she was directed to apply an ointment made with morphia and lard, in the same proportion as the other, twice a day, in order to prevent a return of the attack, but without producing the intended effect, for it again made its appearance in ten days.

In order to make a decided impression on the disease, an ounce of ointment, containing forty grains of veratria, was prescribed for use whenever the pain should come on. In a few minutes after its first application, the symptoms became much increased; they continued for about two hours and then subsided, leaving no trace of the affection behind, nor did it return.

Veratria in Neuralgia.

Case 7.—A gentleman, aged thirty-five, of a spare habit of body, subject to nervous feelings, and accustomed to sedentary occupations, has for the last seven years been seized with excruciating fits of pain, confined to the right half of the head, and returning at the end of every third week. A short time before each attack he suffers much from restlessness irritability, his pulse becomes more frequent, and his memory impaired; and after its cessation he does not return to his usual state of health for two or three days.

He was then directed, during the paroxysm, to make use of frictions with veratria ointment, over the seat of the pain; he first applied it to the forehead, and one rubbing was all that was requisite to remove the pain in that situation, but it still continued with unabated violence in the remainder of the affected region. To this part he was also ordered to apply the ointment, and the pain there, in like manner, yielded to one application. No return of the symptoms has taken place, and he is now in good health. This patient also laboured under considerable palpitation of the heart, which, with the hemicrania, was entirely removed by a few frictions over the left side, for five minutes every night, with an occasional aperient pill.

It is not improbable that the aperient pill had some share in producing the favourable result in this case.

Veratria in Affections of the Heart.

Dr. Turnbull has found veratria beneficial in certain heart affections, viz., angina pectoris, nervous palpitation, and in the distressing symptoms of hypertrophy of the heart. In angina pectoris the veratria ointment, or embrocation, must be rubbed over the region of the heart, and along the affected arm for a quarter of an hour twice a day; and besides this, whenever there is a paroxysm, the applications must be continued until the pain and difficulty of breathing are removed. In nervous palpitation the application need not, in general, be continued for more than five or ten minutes, once or twice a day, according to the severity of the affection. In hypertrophy the whole front of the chest must be well rubbed with the application ten minutes twice a day. In some recent cases of this disease the doctor has used, with decided advantage, a combination of veratria and hydriodate of potass. This should be rubbed over the region of the heart for a quarter of an hour twice a day. In these heart diseases he has found the internal administration of veratria as beneficial as the external. The following is his formula for the ointment of veratria and hydriodate of potass. Take of veratria one scruple, hydriodate of potass half a drachm, prepared lead one ounce. Add a few drops of water to the hydriodate of potass, and rub it to a fine powder; then add the veratria and lard, and mix well.

The following is the author's account of the operation and modus operandi of veratria in rheumatism:—

Veratria in Rheumatism.

"In the acute form of rheumatism the external use of veratria had not been suggested before the publication of the first edition of this work. Since that time my confidence in its powers over the inflammatory stages of rheumatism, as well as over inflammation in general, has been much increased; for when it has been rubbed upon an inflamed surface, and sufficient electro-stimulation produced, a diminution of pain, heat and swelling,

and a secretion of moisture here followed. The heat and swelling of inflammation arise from a previous diseased action of the nerves of the part, and veratria removes these effects, as well as the pain of inflammation, by its electro-stimulation inducing in the nerves a healthy action, and thereby displacing the diseased one."

The last sentence which we have given contains as curious a piece of pathology and therapeutics as any which has come under our observation for some time. Were we not satisfied of the sane state of the writer's mind from other parts of the work, we certainly might feel disposed to recommend to him a voyage to the cradle of his favourite veratria, according to Horace's very concise formula, viz. *Naviget Anticyram.*

Among the other diseases to which our author conceives veratria applicable, he enumerates dropsy, paralysis, cramp of the stomach and legs, scrofulous swellings in the neck, &c. &c. He then proceeds to detail the mode of preparing and using delphinia and aconitine. For this, however, as well as for the application of these new remedies to diseases of the eyes, we beg to refer to the work itself, from the perusal of which we promise our readers that they will derive no inconsiderable share of information.

Haudwörterbuch der Praktischen Arzneimittellehre. Von Drs. Sachs and Dulk. 8vo. Königsberg. 1836.

This a very complete dictionary of the materia medica. The leading articles cles contain numerous judicious critiques on the multifarious absurdities which pervade most works on the subject. Indeed, we know of none more replete with the twaddle of empiricism than our existing treatises on the materia medica. Impressed with this belief, we strenuously recommend the perusal of the German *Handwörterbuch* to all the compilers of Dispensatories.

TO CORRESPONDENTS.

Hibernus.—We cannot inform our correspondent whether or not IRISH students will be admitted to the hospital at the *old* price, until Mr. R. Quain returns from his continental tour.

Hypochondriac.—The immediate application of ANIMAL MAGNETISM, under the special superintendence of the Professor himself. We doubt if it be a case for creasote.

Medical Jurist.—The body should not be opened, according to law, until twenty-four hours after death. Vesalius, the great anatomist, was banished for opening the body of Spanish nobleman before the heart had ceased to move.

A Dresser.—We cannot insert the cases from the NORTH LONDON, unless the *facts* be known to our own reporter. Cases written by an operator, or any of his dependents, are too often deficient in essential particulars.

Lithotomist.—We believe that it has happened to inexperienced lithotrotists that the percussor has been thrust into the abdominal cavity, so that water which was employed to inject the bladder has found its way into the abdomen. It has also happened that a bougie has been thrust through a diseased rectum into the cavity of the abdomen, causing a fatal peritoneal inflammation.

Censor.—We thank our correspondent for his information—it accords with that of our own reporters. We wait however for Mr. Liston's own words, which have been sent to, and are to appear in, this day's Lancet. We shall reply to his outrageous and unjustifiable attack on this Journal, for honestly noticing his fatal case of lithotrity, the exact particulars of which his conduct may compel us to publish, when "he who runs may read." We have no enmity or ill-feeling towards Mr. Liston—we consider him a dexterous surgeon—but we shall publish his unfavourable, as well as favourable, cases, just as we do those of the surgeons of all the other hospitals, because many of the hospital operations performed in London are beneficial to science and humanity, and too many, we regret to state, a disgrace to modern surgery, and some few destructive of human life. The pages of this Journal afford ample evidence of the truth of this statement.

T.—Will our worthy correspondent favour us with his communications?

Medicus.—It is an illegal and dangerous proceeding.

J. S.—The Harveian Prize Essay has not reached us.

Justus—The article is too severe, and is a libel.

All communications and works for review to be forwarded, (carriage paid) to Dr. RYAN, 4, Charlotte-street, Bloomsbury-square.

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LECTURES ON DISEASES OF THE SKIN,

Annually delivered in Paris,

By M. Biett,

Reported by MM. Cazenave and Schedel.

ERYSIPELAS.

Eysipelas is a non-contagious exantheme, characterized by a deep red tint of the skin, with heat and swelling of this membrane, and often of the subcutaneous cellular tissue, always occupying a greater or less extent of surface, and which may, in some very rare cases, become general.

Though it may attack all the parts of the body, the face and extremities are most frequently the seat of it.

Symptoms.—In erysipelas, sometimes the inflammation of the skin is limited to this structure, or only accompanied by a slight inflammation of the subcutaneous cellular tissue; sometimes this tissue is inflamed to a variable extent, and gives rise to symptoms, of a more or less serious nature.

From these considerations we shall distinguish two varieties of erysipelas: the true, and the phlegmonous. In a great number of cases these two varieties exist simultaneously; but as perceptible differences are observed between them, as well with respect to their progress as to the treatment, we deemed it necessary to give a succinct description of each.

Spontaneous lassitude, general depression, shivering transient, though severe, hardness and frequency of the pulse, nausea, epigastric pains, thirst, loss of appetite, and constipation, are precursory symptoms common to these two varieties. It is towards the second and third day of this febrile disturbance, that the erysipelas becomes developed; it sometimes shows itself much sooner.

The true erysipelas, that in which the inflammation scarcely extends beyond the skin, generally presents itself with the following characters: intense redness becomes developed to a greater or less extent, and it is easy to see, by the elevation of the edges, that the surface thus inflamed, is at the same time swollen: this redness disappears for a moment under pressure of the finger, which pressure by the way is very painful; there exists at the same time a pain more or less acute, accompanied by a sensation of acrid and burning heat; the pulse is accelerated, there is some nausea, and thirst; bitter taste in the mouth, and a yellowish coat on the tongue. The epidermis covering the inflamed skin may be raised to a greater or less extent by a yellowish serum, and these bullæ may attain considerable size. They usually appear towards the third or fourth day sometimes they discharge themselves on the day after their appearance, sometimes later; they then discharge a viscid fluid which often coalesces, so as to form crusts.

The general symptoms usually follow the progress of the exantheme, they increase and decrease in the same proportion; sometimes, on the contrary, they are but little developed, notwithstanding the extent of the erysipelas, and *vice versa*.

Towards the fifth or sixth day the redness diminishes and assumes a yellowish tint; the swelling becomes less, and the epidermis becomes covered with a number of small rugæ; by degrees the morbid colour disappears, and desquamation takes place in the parts where it was seated. This is the most frequent as well as the most favourable; but when a number of bullæ exists, the skin becomes covered with small brownish crusts, which in some cases continue for a considerable length of time.

Instead of running through its stages over the region where it is developed, erysipelas may successively attack several parts of the body, according as it disappears in the part primarily affected At other times it extends over a greater or less extent of surface, without disappearing from the part which was the primary seat of it, and may thus simultaneously cover the entire surface of the body, though this is a very rare case. M. Renauldin has cited an instance of general erysipelas in a woman fifty years old. The disease was soon cured.

In some cases it leaves its original place rapidly in order to attack a part more or less remote, without leaving any other traces except slight desquamation. (*erysipele ambulant*).

In persons of a delicate and lymphatic constitution, it attacks the lower extremities; in this case the redness, which is not so bright, is sometimes scarcely developed; the skin, smooth and shining, retains the impression of the finger for some time (œdematous erysipelas). The termination of erysipelas thus accompanied with œdema, is favourable and should not excite any alarm; but this is not the case, when the inflammation is consecutive upon œdema, as is observed in persons labouring under anasarca, and more particularly after scarifications made for the purpose of giving exit to serum; for then the termination in gangrene is to be apprehended; it is announced by the livid tint which the enflamed skin assumes; the raised epidermis forms large irregular phlyctenæ filled with a brownish serum, and death soon takes place in persons already exhausted by previous disease. It is chiefly on the parts of generation and on the lower extremities that erysipelas thus appears after anasarca.

The phlegmonous erysipelas, that which is accompanied by inflammation of the more or less deep seated layers of the cellular tissue may become developed over all the parts of the body; but it is more particularly observed on the extremities; it is sometimes limited to a single region, whilst at other times it attacks at the first onset an entire limb.

In this variety the symptoms are always more severe than in the true erysipelas, but they differ according to the extent and depth of the inflammation and the anatomical structure of the parts affected.

When the cellular tissue is not very deeply inflamed, the erysipelas is accompanied with a very acute burning pain, and with a well marked swelling; there is also considerable fever. Pressure is very painful, and the skin recovers but slowly its morbid colour

The termination in resolution may take place towards the fifth or sixth day; but in general the pain becomes throbbing (pulsative), the redness diminishes, and one or more abscesses form, which when opened give exit to healthy pus which is occasionally mixed with flakes of mortified cellular tissue.

When the cellular tissue is more deeply affected, or when phlegmonous erysipelas occupies an entire limb, the disease sometimes commences with great rapidity, and in general the cellular tissue appears to be inflamed simultaneously with the skin, sometimes even before it. Here the pain is deep seated, the least motion of the limb causes the patient to utter loud cries, the skin is red, very tense, and painful on the least pressure; the pulse is frequent, hard, and concentrated; there is oftentimes delirium, intense thirst, dryness of the tongue, and copious sweats. The termination, unless very active treatment be employed, is hardly ever in resolution; the suppuration, which takes place from the fifth to the seventh day, and sometimes sooner, is accompanied with shivering: the redness of the skin diminishes as well as the pain; but the tumefaction increases; the pus sometimes continues for a very long time without any spontaneous opening taking place on the skin, but most frequently whether this opening may have occurred naturally, or may have been made by art, it runs out mixed with, oftentimes, very large flakes of gangrened cellular tissue. In these cases the duration of the disease is usually long; burrowing takes place beneath the skin, portions of this membrane are thrown off to greater or less extent, and frequently colliquative diarrhœa comes on, which terminates in the death of the patient, who is now exhausted by a slow fever and profuse suppuration. The symptoms of phlegmonous erysipelas may be still more severe, more especially when aponeurotic structures by opposing the swelling, produce real strangulation, as is observed in the feet and hands. The constitutional symptoms are then very violent; from the second to the third day purple spots form on the surface of the erysipelas; the skin loses its sensibility; it becomes covered with phlyctenæ over the spots, which extend rapidly; eschars supervene generally of small extent, more particularly when proper treatment has been employed: they become detached

gradually, and the cure takes place after profuse suppuration of greater or less duration. But when the erysipelas occupies a great extent, and this fatal termination occurs, the system soon feels its effects: symptoms are observed of severe gastro-intestinal irritation characterized by prostration of strength, dryness of the tongue, severe diarrhœa, great frequency of the pulse, &c. To these are sometimes added silent delirium, reveries, stupor, change in the features, precursory signs of death.

According to the region it occupies erysipelas presents some modifications deserving of notice.

Erysipelas of the face is the most frequent of all: it commences in general at the nose, at one or other cheek, on the eyelids, it then soon extends and attacks the entire face; the features in a little time can no longer be recognized; the tumefaction of the eyelids is often very great. There are at the same time constitutional symptoms more or less severe, such as frequency of the pulse, heat of skin, violent headache, want of sleep, and slight delirium during the night. These general symptoms are at times very well marked; but in some cases they scarcely exist. The exantheme is generally at its height on the fourth or fifth day, and the resolution is well marked on the eighth day.

Erysipelas of the hairy scalp often succeeds that of the face. In other cases it becomes developed after punctures, contusions, slight operations, &c. It is remarkable by the odematous tumefaction and great sensibility of the inflamed skin: the redness of the part is not very bright; frequently there is merely observed a slight rosy tint. Termination in suppuration is very frequent in this variety, and the subcutaneous cellular tissue is frequently attacked with gangrene; but mortification of the hairy scalp itself very seldom occurs, by reason of the anatomical disposition of its vessels. Cerebral symptoms come on more frequently, and they are more to be dreaded in this variety than in the others.

Erysipelas of the mammæ frequently presents in women all the characters of phlegmonous erysipelas. It may come on in them a little after their accouchment, particularly in those whose breasts are very large, and with peculiar characters: first an acute pain comes on, but without tumefaction: the skin merely presents a rose tint around the nipple; the redness extends irregularly outwards, and small phlyctenæ of a herpetic character circumscribe its extent; but according as it goes on thus, the skin which was primarily affected becomes of a yellowish white colour; it loses its sensibility, and when at the end of two or three days, the erysipelas becomes limited, this membrane is then found to be mortified over the entire extent which separates the areola of the nipple from the point where the progress of the erysipelas was arrested. The skin thus gangrened, emits no scent; but it becomes detached gradually by suppuration, and then it exhales a very fetid odour. A broad ulcerated surface is exposed, and cicatrization takes place very slowly. The two breasts may be affected with the same disease; but whatever be the extent of the gangrene, the nipples as well as the areolæ surrounding them, remain entirely intact.

Erysipelas of the umbilical region is frequently observed in new born infants, in hospitals, and foundling houses. It is attributed to improper traction of the chord, and more especially to the vitiated air which children breathe in those establishments; it sometimes extends to the hypogastrium, and to the genital parts, which may become gangrenous; death is then the almost inevitable result.

Erysipelas of the limbs is sometimes of small extent; at other times an entire limb is attacked, and in these cases the termination often takes place in suppuration in a circumscribed point, whilst resolution takes place every where else.

The most formidable complications of erysipelas, are no doubt cerebral and gastro-intestinal inflammations, which may become developed in great severity, and may soon end in the death of the patient. It ordinarily happens that in these cases the erysipelas disappears abruptly at the same time that the symptoms of the disease become developed; but in some cases it continues. Swelling of the parotids is rather a frequent complication of erysipelas of the face.

Resolution, metastasis (delitescence), suppuration, gangrene, and death are the terminations of erysipelas: the first is fortunately the most common; it is sometimes preceded by epistaxis, at least in erysipelas of the face.

Necropsy.—In cases of bad erysipelas, there are found not only traces of inflammation on the skin, but the subcutaneous cellular tissue is also very friable and infiltrated with pus.

Under some circumstances, particularly when death has come on very soon after

intense inflammation of the brain and its membranes, no appreciable pathological lesion is found.

In other cases, again, there are found lesions, either of the lungs or of the digestive passages, the existence of which was not even suspected.

Causes.—Erysipelas may attack all ages, both sexes, and appear in all seasons; but it most frequently attacks women and persons whose skin is very fine; it is generally observed in spring and autumn. Sometimes, in certain seasons, and at certain periods, it seems to prevail epidemically, and particularly in hospitals.

Certain external causes may occasion its developement, by acting more or less directly on the skin, such as insolation, the action of cold, local irritants, punctures, a contused wound, a slight operation, &c. But oftentimes, even in these cases, it seems connected with some unknown disposition of the system.

Some causes again exercise a more or less marked influence on the appearance of erysipelas; namely, the habitual use of coarse food putrefied meats, spiced seasonings, fermented liquors, excess at table, watching, &c. In some cases, though very rarely, erysipelas appears under an *intermittent* form; it sometimes comes on *periodically* Hoffman has noticed its return in amenorrhœa, at the time when the menses should appear. It sometimes returns in the same individual, at longer or shorter intervals.

Erysipelas frequently comes on when menstruation is commencing, at the critical period, and on the suppression of some habitual evacuation. Its appearance is often occasioned by strong mental emotions, painful disappointments, or violent gusts of passion; it sometimes accompanies, chiefly in old persons, gastric disturbances. But it is more frequently observed in persons labouring under chronic irritation of the alimentary canal, in those who live for a long time in prisons, in hospitals, and in places where the qualities of the air is deteriorated. Lastly, it appears very frequently in the course of acute gastro-intestinal affections, or in inflammations of the organs, and if very frequently its appearance augments the danger. There are some cases where it appears critical and salutary.

Diagnosis.—Erysipelas is accompanied with characters too well marked for any difficulty to be experienced in its diagnosis. A minute examination is sometimes necessary to detect erysipelas of the hairy scalp, particularly when it is accompanied by a disease, the symptoms of which attract attention to it.

Prognosis.—Simple erysipelas of small extent is a disease not attended with any danger; but the same cannot be said of it when it covers a large extent of surface, or which is complicated with inflammation of the brain or of the alimentary canal. The variety described under the name of *erysipele ambulant*, particularly when it continues for a certain time, indicates a state of the system which should excite considerable alarm.

The prognosis of erysipelas, which is developed in persons labouring under anasarca, as that also attacking persons who dwell in hospitals, prisons, &c., is usually of a serious character.

Erysipelas which comes on in the course of pleurisy, pneumonia, gastritis, &c., is more or less dangerous according to the character of the constitutional symptoms.

The sudden and spontaneous disappearance of this exantheme, preceded or followed by bad symptoms, indicating inflammation of some vital organ, is always to be dreaded.

The prognosis of phlegmonous erysipelas is, in general, more unfavourable, and it becomes still more so according to its extent.

Again, it is a dangerous affection when the skin, which is the seat of inflammation, is attacked with gangrene, and when there become developed at the same time adynamic symptoms, more or less marked.

In some cases, on the contrary, the appearance of an erysipelas has appeared to be a salutary crisis, particularly in gout and rheumatism, &c.

But it is particularly in chronic diseases of the skin, that the natural, or excited developement of an erysipelas may become useful. It then modifies, and with great advantage, certain obstinate chronic inflammations, and especially some scaly affections of long standing, lupus, &c.

Treatment.—When the erysipelas, whatever may have been its cause, is simple, and of small extent, and occasions no disturbance in the system, all that is necessary is to keep the patient under a strict regimen, to give him cooling drinks, and to keep the limb quiet and in the horizontal position, when it is a limb which is affected; the inflammation proceeds regularly and scarcely requires any other additional treatment.

Goulard's lotion, in the cold state, produces very good effects in the erysipelas known by the name of *chilblain*.

When the exantheme is more extensive,

and that violent constitutional symptoms accompany it, as often happens in symptomatic erysipelas, we must have recourse to more active treatment, and in these cases bleeding, emetics, purgatives, and certain local applications should be employed.

Bleeding is in general indispensable: it should be applied promptly in young plethoric subjects, and when the general reaction is very marked; the inflammatory fever which precedes the appearance of the erysipelas, imperatively calls for the employment of this means, when it is very high. Bleeding from the arm is better than from the foot, even in cases of erysipelas of the face, because we are more certain of obtaining the quantity of blood desired: a repetition also may be necessary, if the symptoms are urgent. If, when the pulse loses its strength, the erysipelas still continues intense, local bleedings will be more effectual, especially when the inflammation occupies the face or the hairy scalp. It will moreover frequently be of use to employ these local bleedings simultaneously with general bleeding, taking care to employ them at some distance from the seat of inflammation, and never on the inflamed surface itself.

Bleeding is to be repeated according to the continuance or further increase of the symptoms; there are cases however when, notwithstanding the apparent severity of the erysipelas, we should be somewhat reserved in the employment of these means. There are cases where the disease attacks subjects already debilitated, either by some severe sickness, or by the active treatment considered necessary, and in persons who have lived a long time in prisons, &c.

Emetics are sometimes useful when the digestive organs are exempt from inflammation, particularly when there is a bitter taste in the mouth, a yellowish coating on the tongue, &c. This was the practice of Scott, of Desault, and is, at the present day, frequently employed with advantage, particularly in old subjects.

Purgatives are also occasionally very salutary to remove the saburral state which may accompany an erysipelas of the face; the derivative effect which they produce on the intestinal canal may become very serviceable. In most cases it will be sufficient to have recourse to laxatives or mild purgatives.

Local applications are of the least use in the treatment of erysipelas; it will be particularly necessary to avoid the use of refrigerants, which sometimes produce very bad effects.

Fatty bodies, cataplasms, have no other effect except that of augmenting inflammation. Blisters should not be employed, except for the purpose of arresting the variety called erysipele ambulant or to bring back this exantheme to the part previously affected, when it has disappeared suddenly, and this disappearance coincides with symptoms more or less alarming.

Dr. J. Higginbottom, of London has arrested erysipelas of the face by touching a small surface with nitrate of silver.

The same means have been employed with advantage, in order to circumscribe those attacks of erysipelas which have a tendency to spread. M. Velpeau has already noticed this method.

Phlegmonous erysipelas demands a very active treatment, which will require to be modified according to the extent or severity of the evil. General and local bleeding, often simultaneously, must be employed vigorously, and from the commencement; emollient local baths must be employed and continued for a long time, as well to favour the flow of blood, as to diminish the erythism of the affected parts. But when these means have not produced any amendment, or when they have not been employed, and the symptoms proceed rapidly, we must have recourse to incisions (debridements), not when gangrene has shewn itself, as has been stated, but long before, to endeavour to prevent it.

The extent of the incisions must vary according to the extent and seat of the disease. The object of their employment is to remove the tension of the aponeurotic expansions, and consequently the inflammatory strangulation. The incisions are necessary when the phlegmonous erysipelas terminates in suppuration, or to limit the gangrene.

Compression has been proposed as having sometimes been very serviceable in phlegmonous erysipelas; but when we reflect on the serious concequences which too often happen in fractures, where, on the application of a simple bandage, the limb becomes swollen; the use of this means appears, on the one hand, too dangerous to be adopted, and, on the other hand, as it cannot be employed except at the commencement, and as the advantages of an active antiphlogistic treatment at this period are indispensable. Many instances of success could be adduced in order to warrant us in sacrificing such valuable time to this mode of practice.

LECTURES ON SURGERY

By John Hunter, F.R.S.

Delusive Symptoms respecting Sensation.

This delusion of the senses makes disease seem where it really is not, from the different seat of the symptoms and of the diseased part. Thus, diseases of the liver are referred to the shoulder, of the testicles to the back, of the hip to the knee, and even in some cases, as was before observed, they are referred to some other person. When the trunk of the nerve is injured, the pain is referred to the termination of it, as, after amputation of the leg, pain is felt in the toes. When pressure is made on a large nerve, the most acute sensation will be at some distance below the part pressed on.

A gentleman complained of a pain in the hip, running down the outside of the leg and foot. Supposing it rheumatism, I gave him James's powder, Dover's powder, and volatile tincture of guaiacum, but with no good effect. A liniment of opium to the leg and foot gave some relief. He at last perceived a tumour by the os ischii, just at the posterior edge of the gluteus maximus. This tumour increased, and the person died. The tumour was found to fill a part of the pelvis, and had made its external appearance at the foramen magnum ischii, being filled with coagulated blood; but the pain in the limb seemed to have been produced by its pressing on a great branch of the nerve, but chiefly perhaps from the great ischiatic nerve being stretched very tight over the upper surface of the tumour. Here that happened which may often be observed; that is, the impression made on the trunk of the nerve gave a sensation as if it had been on the extremities of the nerve. The first action of a nerve is at its extremity, and the last in the brain; and this last in the brain refers the sensation receiving the first impression; and if, after the brain has become accustomed to refer any sensation to the extremities of the nerves, any impression be made on the trunk, the brain receives the impression in the same point where it was accustomed to receive the impressions made on the extremity of that nerve, and therefore the mind refers the sensation to the same spot, that is, the extremity of the nerve. This happens when the part to which the sensation is referred does not exist, as a person, having had an amputated limb, will for a long time refer his sensations to the fingers or toes.

In diseases the general character of the patient should be known, which is essentially necessary before we can judge of every symptom; for besides what we can know by the symptoms of a disease, yet peculiarity of temperament, &c. will occasion great differences in the character of the disease. For our being informed by the first mode of intelligence, the patient's sensations, the patient must be in his right senses, otherwise he may be deluded, and delude us. But even where the patient is perfectly sensible, many symptoms may appear to the physician which the patient is not sensible of, as wild looks, quick pulse, &c. The brain may not be conscious of them, and a false conception of their feelings is then present; and this may be called half-delirium. A complete delirium is an action of the mind directed by no sensation whatever. But we do not know how to distinguish between these two deliriums, the former being an action of the mind from sensation, but which sensation is incapable of directing its influence to the senses, and refers it to other parts or other objects. These should be well understood in practice, as in half-delirium the patient will have the sensation, but will direct it to some one else, or to the wrong part, which if we know we may be able to afford them the relief they want. The history of everything relative to a disease should be known, as symptoms alone are often not enough to direct us; we should, therefore, get the history of it and of prior diseases, of peculiarity of constitution, manner of living, &c.

General Principles of Inflammation.

The operation in the body called inflammation is one of the most common and most extensive in its effects, and requires our greatest attention. It is the cause of many effects, both salutary and diseased, producing abscesses, fistulas, diseased bones, &c., and in many diseases is the first step towards a cure; so that it becomes a first principle in surgery.

Inflammation would appear to be produced by an *increased action* of the vessels, but it is most probably in the smallest vessels, for it may be confined almost to a point were none but the smallest vessels exist. What the particular action is, or in what it differs from the common action of vessels, is not easily ascertained,

we being more able to judge of the effects than of the immediate cause.

Inflammation may be considered as a genus, of which there are many species. It may be divided into healthy and unhealthy. The healthy is that which will always take place in a healthy constitution or part, and is rather to be considered as a restorative process than a disease. Unhealthy inflammation is that which takes place in an unhealthy constitution or part, and will vary according to the kind of unhealthiness of that constitution or part.

Inflammation is either simple or compound; simple, when there is only one mode of action in the part inflamed, as in its first stage; compound when there are two or more modes of action The compound produces three great effects, namely, adhesion, suppuration, and ulceration, which I shall call adhesive, suppurative, and ulcerative inflammation. The last is only an effect of inflammation, for the process takes place in a different set of vessels.

I shall place the adhesive first in order, though it is not always so, for with respect to priority of these effects of inflammation, it depends principally on the nature of the parts, with the degree of violence of the inflammation. To explain this more fully, I shall consider inflammation as it effects, 1st, The cellular membrane in general, and the circumscribed cavities; 2nd, All the outlets of the body, i. e, the excretory outlets and ducts of glands, as the mouth, nose, tunica conjunctiva, &c., which have been called mucous membranes, and which I shall treat of in their proper order.

When inflammation takes place in the first order of parts, it is commonly the adhesive; but it will be according to circumstances whether the suppurative or ulcerative follows first, and probably according to the degree of inflammation. But it sometimes happens that the suppurative takes place almost immediately, probably from two causes, either from the inflammation exciting the suppurative almost immediately after the adhesive, or from the inflammation having little or nothing of the adhesive in it. I suspect that the erysipelatous has little of the adhesive in its nature, no adhesion taking place before suppuration, whilst in phlegmonous inflammation of the cellular membrane it does; so that the erysipelatous might be called œdematous inflammation. When inflammation occurs with violence on the surface of the skin, the ulcerative process takes precedence of the suppurative, although in the cellular membrane the reverse of this is the case. In the second order of parts the suppurative takes place first, and the adhesive does not take place, unless the inflammation is carried to a great height.

When the inflammation is in the first order of parts, the suppuration and ulceration are so many actions superadded to the first, or adhesive, and arising out of the effects produced by that which now becomes new causes, especially of the ulcerative, which is an action of the absorbents. All these actions arise from the first irritation or cause.

The adhesive or suppurative, either in the first or second order of parts with their varieties, may have a fourth character superadded, such, for example, as the scrofulous or venereal disposition, or other specific disease.

These three modes of action, when carried on perfectly, are the effects of a good constitution, and constitute what I would be understood to mean by common inflammation.

The union of cavities in an animal body is formed by a uniting medium, which appears to be the coagulable lymph, which, by the inflammatory disposition of the vessels, is separated from other parts of the blood and thrown out on these surfaces. That this is the case appears from the following observations. In all large cavities where we can make our observations with certainty, we find when they have been inflamed that a substance similar to the coagulable lymph when separated from the serum and red particles, is diffused all over the sides or through the cavity. When we cut into an inflamed part after death, we find it firm and solid, like the section of a lemon, or some œdematous tumour, where we know extravasation has taken place; and this appearance arises from the cells of the cellular membrane being loaded with extravasated coagulable lymph.

This mode of separation of coagulable lymph is not peculiar to this species of inflammation; it is separated on many other occasions to form tumours, where inflammation does not seem to be the leading cause.

It is probable that the coagulable lymph undergoes some change in its passage through the inflamed vessels which obliges it to coagulate sooner than it otherwise would, for in those cases of inflamed arms, after bleeding, we find that the cavities of the veins are in many

places furred over, and in others united by coagulable lymph, which must have been thrown out by the vasa vasorum, and coagulated immediately. Hence it is reasonable to suppose that in this separation the lymph must have undergone some change, arising from the vessels, and that it is not simply such coagulable lymph as is circulating in the blood, else it would be carried off by the circulating blood passing through the vein. This change I suppose to arise from sympathy with the inflamed vein. The lymph seems, however, to retain the living principle, and probably in a greater degree than under common circumstances, and is, therefore, better fitted to become a living solid. It does not seem, however, absolutely necessary that coagulable lymph should first undergo this change in the extravasating vessels, for, as I have before said, blood extravasated from ruptured vessels is perhaps equally efficacious in this respect.

In order for spontaneous inflammations to produce suppuration, they must be much more violent than those inflammations (suppuration being equally necessary,) arising in consequence of an operation or accident; and those inflammations from either operations or accidents, if they have not produced death in the part operated on, are more violent and of greater extent than those in which death of a part has been produced. Thus, the inflammation of a boil or bubo is more violent, and commonly more extensive, than that in consequence of a cut, or even amputation of the leg; and the inflammation arising from these latter will be more violent than that from a gunshot wound or the application of caustic. It may not be easy to account for all these differences: however, it is possible that in spontaneous inflammations the inflammation is more necessary for the ultimate effect than the suppuration; as in gout, the inflammation is the mode of carrying off the action of the disease. It is curious to remark, that in gout, nature seems to produce all the purposes and effects intended by inflammation, but unaccompanied by either adhesion, suppuration, or ulceration; and although the inflamtion runs much higher here than in many other cases, and although it is attended with all the common appearances, yet no adhesions are formed here; for the lymph is taken up, and chalk (urate of soda) is deposited in its place. In spotaneous inflammation, parts are either naturally more susceptible of the inflammation, or become so by disease. When inflammation is produced by the stimulus of the death of a part, or of effused blood, the inflammation is commonly slow; but that from a bruise is often quick and violent, but then the injury has not produced death. If caustics do not act with vigour, they will irritate and inflame much sooner than if they had immediately killed the part; but irritating applications must be continued some time to produce inflammation. After operations where inflammation must take place for the union of the wounds, suppuration is more necessary than inflammation, and we find it is soon produced.

The ulcerative inflammation is that which takes place in consequence of suppuration, therefore is not so much the original inflammation as the consequence. It is that inflammation which disposes parts to absorb themselves, and which brings matter or any extraneous substance to the surface to be discharged, the absorbents removing all the parts lying between the matter and the surface. This process has been erroneously ascribed to the melting down or dissolution of living solids with the pus.

From the foregoing general account of inflammation, it may be said to arise in all cases from injury done to the solids, where either the natural conformation of the parts on which natural actions depend is so destroyed that they are not able to support themselves in that state, or from the natural actions or functions of a part being materially obstructed, the texture not being primarily affected. The first state arises from causes that are visible or external, such as the application of any irritating matter, as a blister, heat, or even cold, which acts as a sedative when applied only in a certain quantity; but when in too great a quantity, the parts, finding that they are losing their action, are roused to action beyond that which is natural, in order to destroy the irritating cause. Inflammation may also be produced by causes not known or suspected, or from a constitutional disposition being determined to some part, producing local effects. I need hardly mention that fever is thus often a cause of local inflammation.

Inflammations from the constitution are of two kinds: one may be called accidental, as those arising in common fever; the other are determinate, depending upon the species of fever which may be called specific, as small-pox, &c.

These inflammations are thought to be

critical, but I very much doubt the truth of this opinion. The smallpox and chickenpox are the only diseases that can be brought in proof of it, with perhaps the inflammation of the measles; but even these pustules or abscesses are perhaps not necessary, as critical abscesses, to carry off the fever, for specific fevers cannot exist beyond a certain time, though no eruption appears; which time depends on the nature of the poison, and the constitution. And in these fevers we have large abscesses as often formed as after any other; and certainly I cannot suppose those abscesses to be critical, for they possess nothing of the specific nature of the preceding disease, and must therefore be common; or, where the constitution possesses a susceptibility for scrofula, they may be scrofulous, but not critical; and as the preceding disease has already been followed by pustules or abscesses, which, if they deserved to be termed so, certainly ought to be termed critical, we shall find that these inflammations and abscesses depend on the state of the constitution and part at that time, and are an effect of simple fever abstracted from every specific peculiarity. Fever is at all times a disturbed action, which may have a specific action joined with it or not. The inflammatory fever is perhaps, the most simple fever; and the putrid fever is, perhaps, only the same fever occurring in a constitution predisposed to its peculiar actions. This opinion may be illustrated by what occurs in the smallpox: two different people having this fever from the same infection, the effect in one will be benign smallpox, with only simple inflammatory fever; in the other it will be erysipelatous or confluent smallpox, with a tendency to putridity or gangrene. This difference cannot depend on the specific poison, as this can have but one mode of irritating. Now, since every fever is capable of producing inflammation and abscess, and as I have shown that in specific diseases they have no right to be termed critical, they certainly cannot be supposed critical in common fever.

Inflammation may arise from one of four causes, which may be called remote: 1st. From accidental force applied to a part; 2d. From some irritation, which does not destroy the texture of a part, but simply the natural actions, as friction, blisters, heat, cold, and often fevers of various kinds; 3d. From some particular disposition in the part itself, as boils arising spontaneously; 4th. From the general state of the constitution affecting some particular part, as gout falling on the toe, or irritation of fever on the lungs, liver, or any other part, producing adhesions or abscesses; but such, I suspect, are of the scrofulous kind, and not in the least critical, and therefore belonging to the second cause. To these, I think, we may add specific causes, as scrofulous, venereal, &c., as a 5th; and the stimulus of defect or imperfection of parts, especiallay cavities, as a 6th

Obstruction of the blood's motion in the small vessels has been long supposed to be a great cause of inflammation, but is, I believe, now pretty generally rejected. This was certainly too confined an idea: it reduced all inflammations to one species. The only distinctions of inflammations must have arisen from the nature of the constitution; but this doctrine never could account for the peculiar action of any specific disease or poison. It was also too mechanical. If they had said that any obstruction to the natural actions of the parts which could stop the blood's motion in the part became the cause of inflammation In such a case the stagnated blood would cause irritation of the vessels, and suppuration would be employed to get rid of it. The immediate operation of these inflammations cannot be called disease, though their remote causes may, as smallpox, &c.; for they may arise from the part being only disturbed, and hardly exceeding the idea we have annexed to that of being disturbed. It is the cause producing inflammation, then, which is the disease, and not the inflammation, for all inflammations that can be called diseases have specific causes; and, indeed, even these can be hardly called diseases, for in smallpox, where the inflammation goes on well, it is merely the action of health; if diseased, it would be erysipelatous, &c. Sometimes, by amputating a leg, more than simple disturbed action is produced, for it is a great loss to the constitution; but yet when the constitution is in a healthy state, we generally find a healthy inflammation and digestion of the wound take place: it will not go into an inflammation which is unhealthy. Specific inflammation as well as simple inflammation partake of the nature of the constitution. Some constitutions are more disposed to certain specific actions than others, and will fall into that specific kind of inflammation, as the erysipelatous, the scrofulous, &c.; and every aggravation is an aggravation of the specific nature of the

inflammation; thus it happens in scrofula, cancer, &c. But some specific irritations bring all constitutions to their own nature, as the plague, jail-fever, &c. Here it is not a specific joined with a simple inflamation, but a thorough change of constitution, and the patients generally die, all suffering alike. The inflammation arising from these causes may be either the adhesive or the suppurative. From all which we may conclude that irritations either produce inflammation according to the disposition of the constitution or of their own nature, of which last is the plague.

The specific diseases will change, according as the constitution changes; for instance, after receiving the smallpox, if the constitution, then healthy, should by any means become disposed to show putrid symptoms, the smallpox will have the appearance; but if the constitution is altered from this tendency, the eruption will also alter. Now the knowledge of this fact is very useful in the treatment of specific diseases: for example, if with a venereal chancre the constitution be erysipelatous, we may have an erysipelatous inflammation in addition to the chancre, which will spread over the whole penis. Now, in this case, we must make use of mercury against the one, and of bark against the other of these specific diseases, until we bring it to the simple ulcerative inflammation. Again, in the smallpox, when simple, the pustules retain their specific distances, but if an erysipelatous inflammation be joined to it, it becomes of the confluent kind. In the irritable constitution we find from continuous sympathy the inflammation will extend itself very far; but in general we find that considerable inflammations confine themselves very much.

Some parts are more susceptible of one kind of inflammation than of others, some admitting of only one kind, some two, and some all three, which difference appears to be according to the situation in the body of the inflamed parts, and also according to the nature of the parts inflamed. The deeper-seated parts, especially the vital, admit very readily of the adhesive inflammation, as is proved by dissections, for we hardly ever open a human subject that has not had considerable adhesions in the circumscribed cavities; but they do not so readily pass into the suppurative, which is fortunate, otherwise internal inflammation would oftener kill. But if the inflammation comes on at once with great violence, it would appear to pass almost at once over the adhesive, and to take up the suppurative action, and in this case we may sometimes have the erysipelatous added.

The external parts of the body are more susceptible of the suppurative inflammation than the internal, but they always begin with the adhesive. This greater susceptibility of the superficial parts to suppuration is shown in the passage of pins, bullets, and other extraneous bodies to the surface: if deep-seated, they will remain a long time inactive, inclosed in a cyst, and produce no inconvenience until they work their way to the skin, when suppuration will be produced. It is very remarkable of the cattle which feed in the bleaching fields, and are always found after death to have a number of pins in them. (The stomach of a bull was shown, in which several pins were sticking, and which were not known to have caused any inconvenience.) Perhaps this does not altogether depend on the situation of the part, but also on the degree of irritating power possessed by the extraneous substance: thus, metals and glass seem to produce such a disposition in the part, that it becomes satisfied with the adhesive inflammation. A gentleman had a piece of glass in his hand for many weeks, which produced no pain, except on pressure. This insensibility of deep-seated parts to extraneous substances, depends on a sac being formed round these substances, possessing a peculiar degree of insensibility. Nature acts here with her usual care, preferring the least evil by securing the extraneous substance in a part possessing peculiar insensibility, rather than calling up the vital powers to produce suppuration, which must be considerable to reach the surface, and might expose parts which would be attended with considerable danger; but when they become external, then she chooses the other, to get rid of them as soon as possible.

In my division of parts, as regards inflammation, into two orders, I have made a distinction between the cellular membrane and circumscribed cavities on the one hand, and the ducts, canals, and outlets which are lined with what has been called a mucous membrane on the other. In the first order of parts, inflammation proceeds in this order; adhesive, suppurative, ulcerative: but in the second order of parts, the order of inflammation seems to be inverted as regards the two first, as may be seen in internal canals In these, if the inflammation is but slight,

the suppurative takes place almost immediately, not being retarded by the adhesive going before: as we see in gonorrhœa, catarrh, &c. It has been said that these discharges are not purulent, but in my opinion they certainly are; the purulent matter being only a change in the natural secretion, and its thickness or thinness depending on the degree of the inflammation. If the erysipelatous inflammation should come on in these parts, then the movement takes place from the suppurative to the ulcerative. In the mucous membrane ulceration will take place, probably from the violence of the inflammation having produced coagulable lymph, which acts as a stimulus, and the parts having been weakened, are unable to support themselves: this is sometimes the case in the mouth, from salivation; in the tongue, in scurvy &c.; in the intestines in dysentery, &c. Mr. Hunter endeavoured to produce adhesive inflammation in the vagina of an ass. He first, by moderate stimulus, could only produce suppuration, but by a very active stimulus, as a solution of corrosive sublimate, he produced the adhesive, causing coagulable lymph to be effused, which afterwards became membranous and inseparable, as was seen in the preparation of the parts which he exhibited.

THE ANATOMIST.

ORGANS OF THE SENSES.

THE ORGAN OF TOUCH.

The skin is composed of the cuticle, or epidermis, the rete mucosum, and the corion, or cutis vera.

The cuticle is a transparent inorganic layer of membrane, extending over the corion. Its thickness varies, being thinnest in those parts least exposed to pressure and friction, and thickest in the soles and palms.

The rete mucosum is a thin membrane attached to the outer surface of the corion, highly vascular, and gives the colour to the skin, being black in the negro, and white brown or yellow in the European.

The corion is a dense strong membrane, consisting of fibres, interwoven with each other, which are more firmly compacted the nearer they are to its outer surface. Its internal surface is cellular, its external very vascular, and presenting numerous small conical papillæ; at the extremities of the fingers these papillæ are best developed, are furnished with minute nervous filaments, and covered with very thin cuticle; thus affording a delicacy of organization necessary for the greater perfection of the sense of touch.

THE ORGAN OF SMELL.

The nose is bounded superiorly by the nasal, frontal, ethmoid, and sphenoid bones; inferiorly by the palatine plates of the superior maxillary and palate bones; externally on either side by the superior maxillary, lachrymal, inferior spongy, ethmoid and palate bones, and by the internal pterygoid plates of the sphenoid bone. It is divided into the *two nares* by the *septum nasi*, which is formed by the azygos process of the sphenoid bone, the nasal plate of the ethmoid bone, the vomer and the mesial spines of the superior maxillary and palate bones. Besides the bony boundaries, the nose presents, anteriorly, five cartilages, which form the *anterior nares*, or the nostrils. The middle vertical cartilage is of a triangular form, and rests in the fissure of the vomer, inferiorly is attached to the vertical plate of the ethmoid bone above, and presents anteriorly a subcutaneous, free, thick edge, and thus completes the septum nasi. The lateral cartilages which form the wings of the nose, are also triangular, are attached to the superior maxillary and nasal bones, and in the median line to the vertical cartilage. The inferior lateral fibro-cartilages, are attached to the three cartilages just described, are thick and semi-circular, forming, with the vertical cartilage, the anterior-inferior oval openings of the nostrils.

The posterior nares are of an oval shape, and open into the upper part of the pharynx; they are separated from each other by the posterior free edge of the vomer, are bounded superiorly by the body of the sphenoid bone, inferiorly by the palate bones and externally by the internal pterygoid plates of the sphenoid bone. The external lateral wall of each naris, from the arrangement of the spongy bones, form three fossæ, called *meatuses*, with which several orifices communicate.

In the inferior meatus, at the junction of its anterior with its middle third, is the opening of the *nasal duct*, and posteriorly, on a level with the inferior spongy bone, is the opening of the Eustachian tube. In the middle meatus is the slit-like opening of the antrum maxillare, anterior to which is the groove called *infundibulum*, which leads from the fron-

tal sinus, and into which open the anterior ethmoidal cells.

Into the superior meatus, the posterior ethmoidal cells and the sphenoidal sinus open. The interior of the nose is lined with the schneiderian membrane, which is highly vascular and sensible, and consists of two layers, a fibrous layer, which is the periosteum, or the perichondrium of the nasal cavities, and a mucous membrane. The nerves which supply the nasal cavities are the olfactory, the internal nasal of the ophthalmic, and branches derived from Meckel's ganglion.

THE ORGAN OF TASTE.

The tongue presents several papillæ covered by mucous membrane. It is of a triangular form, is connected by its base to the os hyoides, by folds of mucous membrane to the epiglottis and palate, and by muscles to the lower jaw. It is highly vascular, and receives six nerves, three on either side, viz., the gustatory branch of the fifth for taste, the ninth, or lingual, for motion, and the glosso-pharyngeal to connect it in sympathy with the pharynx.

THE ORGANS OF VISION.

The eyes are distinguished into the globes of the eyes and their appendages. The eye-ball is composed of membranes and fluids, called humours.

The sclerotic coat, occupying about four-fifths of the globe, is of a strong fibrous structure, is thicker behind and anteriorly than in its centre. Its outer surface is in contact with the adipose tissue of the orbit, the tendinous expansions of the orbital muscles, and anteriorly with the conjunctiva, its inner surface being lined by the choroid coat. It presents posterior a small aperture for the transmission of the optic nerves, and an anterior large one, about six or seven lines in diameter, for the cornea.

The cornea, which forms the anterior fifth of the globe, is smooth and transparent. It consists of three layers, viz., the conjunctival layer externally, the elastic cornea internally, and, between both, the proper cornea, which is composed of laminæ, connected together by fine cellular tissue.

The *choroid coat* is a thin vascular membrane, situated between the sclerotic coat and the retina; it extends from the entrance of the optic nerve to the ciliary ligament, to which it is firmly connected; it then is directed inwards, and forms the folds called ciliary processes. Its internal surface is covered by a dark brownish secretion, called *nigrum pigmentum*, its outer surface being connected to the sclerotic coat by fine cellular tissue, and by the ciliary vessels and nerves; on this surface the veins observe an arched arrangement, and are called *vasa vorticosa*.

The *ciliary ligament* is about a line and a half in breadth, of a greyish white cellular structure, and corresponds to the circle of junction of the cornea and sclerotic coat externally, and the choroid and iris internally.

The *ciliary processes* vary in number from sixty to seventy, and are productions or continuations of the choroid coat; each ciliary process is of a triangular figure, the anterior edge being attached to the ciliary ligament, the posterior to the hyaloid membrane, and the internal free projecting into the posterior chamber of the aqueous humour, towards the lens but not attached to this body.

The *Iris* is a circular membrane placed in a transverse vertical position, attached by its larger circumference to the ciliary ligament, floating in the aqueous humour, and presenting a circular opening in its centre called the *pupil*. It divides the space between the anterior surface of the capsule of the lens, and the posterior surface of the cornea, unequally into what are termed the *chambers of the aqueous humour*, the anterior chamber being much the largest; both chambers, however, communicate through the pupil. The anterior surface of the iris presents a radiated appearance, and varies in colour in different individuals; the posterior surface is covered by nigrum pigmentum, and has received the name of *uvea*. The iris is supplied by the ciliary nerves and vessels.

The *retina*, placed between the choroid coat and vitreous humour, consists of three layers, an external or *serous layer*, called from its discoverer *membrane Jacobi*, an internal or vascular layer, and between both the nervous layer. About two lines on the temporal side of the entrance of the optic nerve the retina presents a small hole surrounded by a yellow margin, called *the foramen of Sœmmering*, round which the retina is thrown into a fold.

The *aqueous humour* is contained in the anterior and posterior chambers of the eye, is perfectly transparent, and is from four to five grains in quantity.

The *vitreous humour* occupies about three posterior fourths of the eye, it is contained in the *hyaloid membrane*, which not only envelopes it, but sends numerous

partitions from its inner surface to form cells in which the transparent fluid is deposited. The vitreous humour thus contained in its capsule is convex posteriorly and on its lateral circumference, but presents anteriorly a concavity for the reception of the crystalline lens; around the circumference of this cavity the vitreous humour presents a striated appearance, caused by the marks of the ciliary processes, to which the term *corona ciliaris* is applied.

The *crystalline lens*, enclosed in its capsule and placed in the anterior depression of the vitreous humour, is a transparent body, presenting an anterior and a posterior convex surface, the latter being more prominent, and corresponding to the vitreous humour. Its external surface is soft and pulpy, gradually increasing in density towards its centre.

The *capsule* of this body, like the lens itself, is transparent, and from its thickness, strength, and elasticity is considered by Dr. Jacob as being cartilaginous.

The lens and its capsule derive their nutriment from the vessels of the hyaloid membrane

Liquor Morgani is a fluid which is found some hours after death, between the lens and its capsule. It is the effect of transudation.

Canal of Petit.—The lens is retained in its situation by the hyaloid membrane, which, splitting into two laminæ at its circumference, pass one anterior the other posterior to its capsule; a triangular canal is thus formed, and is intersected by minute septa; this is the canal of Petit, and may be demonstrated by distending it with the air, when it will present a vesicular appearance.

THE APPENDAGES OF THE EYE.

The *lacrymal gland*, placed in the upper and outer part of the orbit, behind the external angular process of the os frontis, and about the size of a small almond, is of a greyish colour, consists of numerous granules, united by an imperfect capsule, and pours forth its secretion of tears by means of five or six minute ducts, which open behind the upper eyelid, in the angle formed by the reflection of the conjunctiva.

Tunica Conjunctiva, a mucous membrane which lines the interior of each eyelid and is reflected on the anterior part of the globe of the eye. At the inner angle of the eye it forms a small fold called *plica semilunaris* covers the *caruncula lachrymalis*, and having lined the lachrymal sac and duct becomes continuous with the mucous membrane of the nose.

This membrane where it passes over the cornea is perfectly transparent.

Caruncula lachrymalis, a small vascular body composed of mucous glands and cellular tissue situated in the nasal angle of the eye and covered by the membrana conjunctiva.

The *palpebræ* or *eyelids*, semicircular in form are composed of skin externally, which is very fine, the tunica conjunctiva internally, and between both the orbicularis palpebrarum muscle, the tarsal cartilages and their ligaments, and the Miebomian glands, together with blood vessels, nerves, and absorbents.

The superior eyelid besides being the largest has also peculiar to it, the levator palpebræ superioris muscle.

The *tarsal cartilages* are thin cartilaginous plates of a semicircular form, the superior being the largest; to their convex margins are attached the *palpebral ligaments* which are continuations of the orbital periosteum.

The *Miebomian glands* of a yellow colour are very numerous, particularly in the upper eyelid, and are arranged in vertical rows.

The opposed edges of the eyelids are thick and are bevelled off obliquely towards the eye, so that when closed they only touch at their anterior edges; thus leaving a triangular canal, the base of which is formed by the tunica conjunctiva, along which the tears are conducted to the puncta lachrymalia.

The *ciliæ* or *eyelashes*, attached by their roots to the opposed margins of the eyelids observe a curved arrangement, their convexities looking towards each other.

The *puncta lacrymalia* are the two minute orifices of the lachrymal canals, placed within two or three lines of the nasal terminations of the eyelids and upon their opposed edges.

The *lachrymal canals*, the superior of which is longer and curved, the inferior being nearly straight, lead from the puncta lachrymalia to the lachrymal sac.

The *lachrymal sac*, placed in the fossa, formed by the lachrymal and superior maxillary bones, is of an oval form, receives the lachrymal secretion by the puncta lachrymalia and transmits it to the nasal duct with which it is connected inferiorly.

The *nasal duct*, enclosed in a bony canal formed by the lachrymal, superior

maxillary, and inferior spongy bones, passes obliquely downwards, backwards, and outwards, and terminates in the inferior meatus of the nose.

THE ORGAN OF HEARING.

This organ consists of the external ear including the auricle and meatus auditorius externus; the middle ear, including the cavity of the tympanum and its appendages, and the internal ear or labrynth, including the vestibule, semicircular canals and cochlea.

The *external ear* consists of a fibro-cartilaginous plate covered by skin and so moulded as to form different elevations and depressions, which have been described with more minutness than they deserve.

The *helix* is the semicircular eminence which forms the outline of the external ear.

The *antihelix* commences superiorly by two roots, which enclose a fossa, (*fossa navicularis*) and is situated inferior to the helix.

The *tragus* is an eminence placed anterior and inferior to the meatus externus.

The *antriragus* is a smaller eminence posterior to the meatus externus.

The *lobule* is a pendulous body placed underneath the antitragus.

The *concha* a deep conoidal cavity which leads to the meatus externus and to which the several depressions, formed by the eminences just described, lead.

The *meatus externus* is a curved canal which leads from the concha to the membrana tympani; it is lined by skin beneath, which are placed small glands (*glandulæ ceruminosæ*), which secrete the ear-wax (cerumen). The inner half of this canal is surrounded by bone.

The *membrana tympani*, separating the external from the middle ear, is of an oval form and consists of three layers, viz., the external or cuticular, the internal or mucous, and between both a fibrous layer, which some have supposed to be muscular. To its inner aspect is attached the crus of the malleus which, by drawing it towards the middle ear gives it a concave aspect externally.

The *middle ear* consists of the cavity of the tympanum and the small bones of the ear and their muscles.

The *cavity of the tympanum* is an irregular cylindrical space, closed externally by the membrana tympani, and bounded posteriorly by a bony partition which separates it from the labyrinth. It presents the following eminences and foramina, viz: the *promontary*, a convex eminence situated on its internal side and which marks the situation of the vestibule; the *foramen ovale*, placed above the promontary and to which the base of the stapes is affixed; the *foramen rotundum*, below the promontary, closed by a membrane (*lesser tympanum*), which separates the scala tympani of the cochlea from the cavity of the tympanum; *the opening of the mastoid cells*, situated posteriorly and superiorly; the *pyramid*, a bony projection placed below the opening of the mastoid cells, hollow within and containing the stapedius muscle; a *small foramen* below the pyramid for the transmission of the chorda tympani nerve; anteriorly the openings of the two bony canals, the superior of which lodges the tensor tympani muscle, the inferior forming the bony part of the eustachian tube; inferiorly is the opening of the Glasserian fissure, and superiorly are several small foramina for blood vessels.

The *bones of the ear* are three in number, very small and contained within the cavity of the tympanum.

The *malleus* is divided into the head which is smooth and articulates with the incus; the neck which is small and connects the head to the shaft; the *handle or shaft* which descends from the neck and is attached to the membrana tympani, and the *processus gracilis* which passes from the neck to the Glasserian fissure.

The *Incus* is divided into its body, which presents a cap-like cavity for the head of the malleus; a superior crus, which is short and lines the mastoid cells, and a long crus, to the extremity of which is attached a small process of bone, considered by some as a distinct bone and called *os orbiculare*.

The *Stapes* presents a small head which is attached to the orbicular process, a short neck, two curved crura, which terminate in the base, the base itself being of an oval shape and connected to the foramen ovale.

The *internal ear or labyrinth*.

The *vestibule*, placed behind the cochlea and before the semicircular canals, is a small oval cavity lined by a membrane common to the labyrinth, contains a watery fluid, and presents the following openings, viz.: The foramen ovale, the five orifices of the semicircular canals, the orifice of the scala vestibuli of the cochlea, and the orifice of the aqueduct of the vestibule.

The *semicircular canals*, placed behind the vestibule are three in number, two

vertical and one horizontal; of the former, one is superior and the other posterior. The openings of these canals are only five in number, in consequence of one opening of the vertical canals being common to both.

The *Cochlea*, of a conical form, the base towards the internal meatus, the apex towards the carotid canal is composed of a bony tube which makes two turns and a half round a central pillar called *the modiolus*. This tube is divided longitudinally by a thin plate, half bony half membraneous and called *lamina spiralis*, into two independent cavities: the two tubes thus formed are called the scalæ of the cochlea, they both unite at the apex in a cavity called *infundibulum*, and at the base of the cochlea they separate, one called *scala vestibuli*, the other called *scala tympani*, which opens into the tympanum by the foramen rotundum. From the scala tympani proceeds a narrow bony canal called *the aqueduct of the cochlea*, which terminates in a slit-like opening in the petrous bone, a little inferior to the meatus auditorius internus.

The *auditory nerve* gains the internal ear by the minute foramina at the base of the meatus auditorius internus, and is expanded in the form of soft pulpy filaments in the cochlea and vestibule.

THE ABSORBENT SYSTEM

comprehends, 1st. the vessels which convey the lymph and chyle into the veins, and 2ndly. the enlargements which occur in their course called glands or ganglia.

The *Lacteal or Chyliferous vessels* commence on the mucous surface of the intestines, pass through the mesenteric glands backwards towards the spine, where they terminate in the thoracic duct.

The *lymphatic vessels* are found in most situations of the body, and generally observe a deep and superficial arrangement.

Lymphatics of the lower extremities. The superficial set accompany the external and internal saphena veins: they communicate freely in their course with the deep lymphatic trunks which accompany the deep vessels. Those which accompany the external saphena vein enter the glands in the popliteal space, whilst those accompanying the internal saphena vein ascend to the groin and pass through the inguinal glands, having formed numerous connections with the superficial lymphatics of the abdomen, the perineum, and the genitals. The deep lymphatics of the hip and perineum are conducted by the branches of the internal iliac vessels into the pelvis and pass through the pelvic glands. From the inguinal and pelvic glands the lymphatics pass along the primitive iliac vessels to the receptaculum chyli.

The *Thoracic Duct.* This canal commences by a dilatation called *receptaculum chyli*, placed on the body of 2nd. or 3rd dorsal vertebra, passing between the crura of the diaphragm it gains the posterior mediastinum, where it lies between the aorta and the vena azygos; at the fifth dorsal vertebra it crosses the spine obliquely to the left side, passing behind the œsophagus and arch of the aorta, and placed behind the left pleura and between the left carotid and left subclavian arteries, it is conducted by the œsophagus to the left side of the neck as high as the sixth cervical vertebra, where, making a slight curve downwards and outwards, it opens close to the angle formed by the left subclavian and jugular veins

Lymphatics of the upper extremities. —The superficial set accompany the superficial veins, and pass through two or three glands situated at the inner condyle; having joined the deep lymphatics which accompany the venæ comites, they proceed onwards to the axilla, and pass through the axillary glands; following the course of the axillary vein, they pass beneath the clavicle, join the lymphatics of the neck, and terminate in the thoracic duct. The lymphatics of the right upper extremity and right side of the neck unite to form the *right* or *lesser thoracic duct*, which opens into the right vena innominata.

The lymphatics of the trunk consist of a deep and superficial set; in the chest the former are seated between the muscles and pleura, in the abdomen between the muscles and peritoneum, the superficial being subcutaneous. The viscera contained in the chest and abdomen also have a superficial and deep layer of lymphatics, the deep being distributed to the peculiar tissue of each organ, the superficial running beneath the membranous envelope.

Lymphatics have been denied to the brain and spinal chord, and to the ear, eye, and placenta.

LINNÆAN SOCIETY.

From a forthcoming "History of the Learned Societies of the Metropolis,"

By A. Booth, F.B.S., &c.

The impulse given to the prosecution of science, and the steps which were taken on the Continent, in the advancement more particularly of natural history, towards the termination of the eighteenth century, gave a powerful impulse to English philosophers and naturalists. Hitherto the transactions of the Royal Society had been the only archive for the deposit of the results of their progress, or the arena of their discussion; and its proceedings were so very extensive that the limits of research in any capacity were of necessity extremely narrow. From the beginning, that learned body had bestowed great attention upon the physiological part of natural history. Mr. Willoughby, the distinguished English naturalist, was one of the original fellows; his friend Ray, the father of English botany, was admitted in the year 1667; Dr. Lister, the great conchologist, was very early associated with it, as well as that admirable vegetable physiologist, Dr. Grew. Nor was France behind hand with England in attention to the sciences, and particularly of natural history. Henry IV. had long ago endeavoured to promote literature and useful knowledge throughout his dominions; and, amongst other institutions, the botanic gardens at Paris and Montpelier were owing to his munificence; but his untimely death, and the subsequent disturbances, for a while put a stop to the cultivation of the arts of peace. In the reign of Louis XIV., for the purpose of promoting botany and enriching the royal garden, the illustrious Tournefort was sent to the Levant; and the accurate and indefatigable Plumier made three voyages to America, and died as he was about undertaking a fourth. An Academy of Sciences was instituted at Paris in 1666, and another some years after at Montpelier. Many similar institutions were set on foot throughout other parts of Europe, of which was the Imperial Academy, Naturæ Curiosorum, begun in 1652. A number of botanic gardens were also established in Germany, and the gardens of Holland were overflowing with riches from the most distant parts of the globe. The Amsterdam garden, under the care of the Comelins, was now one of the first in Europe; and that of Leyden was rendered celebrated by the catalogue published by Herman. Holland had likewise the glory of producing at this time that most sumptuous and excellent work, the *Hortus Malabaricus*, by which a new world was, in a manner, laid open to the botanists of Europe, and from which they learned with surprise that the knowledge of plants had made almost as much progress in the remote regions of Asia, as in their own part of the world. The study of nature, however, was no where making so uniform and steady progress as in Sweden, for at Upsal, under the auspices of the great Rudbeck, was laid the foundation of an unrivalled school of natural history, which was destined afterwards to give laws to the rest of the world.

During this period several distinguished botanists and naturalists brought forward several systems, upon many of which warm controversy ensued. The first who revived the idea of a classical arrangement of plants, since the time of Cæsalpinus, was Morrison, after whom succeeded Ray, Tournefoot, and Rivinius. To these succeeded Vaillant, who is the first who was well acquainted with the sexes of plants; Boerhaave, whose system had great merit in being founded more or less on all the parts of fructification; Christopher Knaut, whose method was an alteration of that of Ray, without any improvement, and Professor Magnol, of Montpelier. Nor was this era of botany a systematic one, as Linnæus asserted that, at the termination of the seventeenth century, within the space of twenty years, twice as many plants were discveered as had been made known by the joint labours of all preceding botanists. Besides those which were collected by Tournefort, Plumier, and Ray, a noble collection was brought from Jamaica, by Dr. Sloane afterwards Sir Hans Sloane. Mr. Sherard, consul at Smyrna, who cultivated botany with princely munificence, and the ardour and discernment of a true philosopher was the means of making known a very great number of plants; and his vast herbarium and library were deposited in the University of Oxford. The indefatigable Plukenet procured and published an immense number from all parts of the world; Petiver was no less persevering in making collections; the acquisitions of Dr. Herman in Ceylon were very considerable; and the rich treasures of Amboyna were made known by the laborious Rumphius, whose ardour was not to be damped even

by the greatest misfortune that can befal a naturalist—the loss of sight.

While botany was making this great progress, entomology began to be cultivated with an assiduity which was amply repaid by the curious and astonishing facts it brought to light, the notion of equivocal generation having been refuted by Harvey, Redi, and Malpighi, the propagation and metamorphoses of insects became an interesting objects of inquiry with several able men; among the first of whom were Goedart and Swammerdam Madame Marian also wrote a work on the insects of Surinam, one of the most splendid in natural history. Other admirers of nature turned their attention to shells and marine productions; a few authors, as Aldrovandus, Columna, Imperati, &c., had written on shells about the beginning of this century, but at the end Bonnani and Lister were particularly distinguished as writers on conchology. Mineralogy yet made little progress, for even now Tournefort maintained the vegetation of stones, and Lister asserted that extraneous fossils were only *lusus naturæ*, and never were the real shells they represented.

The removal of Dillenius to England, who published an excellent edition of *Ray's Synopsis Stirpium Britannicarum*, in 1724; the assistance and encouragement given to the science by those distinguished brothers, William and James Sherard, as well as by Sir Hans Sloane, seemed to promise the establishment of the botanic scepire in this country. The Physic Garden, at Chelsea, was in a very flourishing state under the care of the celebrated Miller; and that of Mr. Sherard, at Eltham, contained one of the choicest collections in Europe. Botanists were, however, almost at a stand without arrangement, as all the different systems which had been proposod were found very insufficient for the purposes of practical botany; the science was again in danger of relapsing into confusion, and botanists were almost overwhelmed with the riches which daily flowed in upon them. In this state of things a new turn was given to the science of botany, and indeed to all natural history, by the publication of the *Systema Naturæ* and *Fundamenta Botanica*, of Linnæus, in 1735, nor were the learned world determined how they should receive these extraordinary productions, when, in 1737, the same author fixed the attention of all Europe by his *Critica Botanica*, *Genera Plantarum*, *Hortus Cliffortianus*, *Flora Lapponica*, and *Methodus Sexualis*, five works of great merit, all the produce of one year. Returning in 1739 to Sweden, his native country, he laid the foundation of the Academy of Sciences at Stockholm, of which he was the first president; and his medical and botanical lectures at Upsal soon attracted a number of students from all parts of the world, and exalted that university to a degree of fame previously unknown. His *Fauna Suecica* appeared in 1746, and his *Materia Medica* in 1749; in 1751 appeared the *Philosophia Botania;* and two years afterwards, the first edition of his *Species Plantarum*. This may be reckoned the most flourishing period of natural history, when disputes about methods and systems being for the most part laid aside, every admirer of nature's works was employed in practical observations and discoveries; while Linnæus, whom nothing escaped, and to whose decision all doubts and difficulties were referred, supervised and methodised the whole. His improvements, in particular, had so much facilitated the study of botany, that it was no longer an abstruse science confined to the schools, but became an agreeable amusement to persons of leisure in all ranks and situations.

At this period in England, great progress had been made in Horticulture, particularly by the celebrated Miller's instrumentality. Bartram was sent to America for the purpose of supplying our gardens with plants; and we are much indebted to him, as well as to Houston, who discovered many rare vegetables in South America and the West Indies. In Holland botany was ably supported by the labours of the two professors, Van Royen, at Leyden, and the assiduous Burman, professor at Amsterdam. In Germany, Professor Ludwig, of Leipsic, was in great reputation, and he showed himself an able physiologist and accurate observer, but no where were the Linnæan improvements more slowly received than in France, except in the south, where they had many admirers. At Berlin, botany and Linnæus had long a noble support in Professor Gleditsch, who first principally distinguished himself by answering the criticism of a contemporary upon the Linnæan system. In addition to the tour of Linnæus to Lapland, of Buxbaum to the Levant, and of Gmelin to Siberia, where they were sent by the Petersburgh Academy, several expeditions for researches in Natural History, were undertaken by the disciples and pupils of the

former. In 1745, Ternstroem, one of his first, undertook a voyage from China, but died at Poulicandor; Katm, who visited North America in 1747, by his botanical discoveries very much enriched the *Species Plantarum* of his great master; Hasselquist visited Egypt and the Holy Land in 1749; Osbeck went to the East Indies in 1750; and Loefling, a favourite disciple of Linnæus, and an excellent botanist, undertook the examination of Spain in 1751, where he found many new and rare plants; but having left for South America, he was there cut off at the early age of twenty-seven. Amongst others, Martin and Solander visited Lapland, Bergius and Talk went to Gothland, Solander to Surinam and St. Eustatia, in 1775; Martin visited Spitzbergen in 1771, and Toren went twice to the East Indies; all of whom contributed very much to the general stock of natural knowledge. Whilst botany was thus progressing, the age of Linnæus was no less brilliant in zoology. In our own country was the ingenious, accurate, and patient Ellis, whose discoveries relating to coralines formed one of the most interesting events in the history of the last century. Many of the most systematic botanists, as Scopoli, Hudson, and Alioni, turned their attention to the study of entomology which also boasted of Geoffrey, De Geer, and Reaumur. A still less attention was paid to the works of Linnæus in France, than even to those on botany, which was principally attributed to the success of his great opponent, the Count Buffon, whose splendid publications and captivating style of writing, so well calculated to dazzle the multitude, and to charm the people among whom he lived, engrossed all the attention of his countrymen, and have been admired throughout Europe. The French possessed a more systematic writer than the latter in Brisson; and England produced a genius at least equal to the latter in Pennant; whilst Bonnet, of Geneva, was equally distinguished. In 1771, Linnæus, whose powers were beginning to decline, published the *Mantissa Altera*, which may be considered his botanical testament soon after which he died.

HEAT—COLD—CLIMATE—AIR.

The known powers of nature may be reduced to two primitive forces, *attraction* and *repulsion*. The first is the cause of *gravity*; in other words, it is by the attraction that exists between the mass of the earth and all bodies near its surface, that everything has a natural tendency downward; that, in fact, all matters naturally fall to the ground, &c. The second principle is the cause of *elasticity*, and this, by counteracting the effects of attraction, prevents the matter of the universe from becoming a solid mass.

Ancient authors believed, and it is still popularly understood, that there are only four distinct species of elementary or original matter, namely, fire, air, water, and earth. Modern science has however discovered that none of these are to be considered as *elements*, or *primary substances*; while, on the other hand, it has increased the number of elementary *principles* to fifty-two. But as the popular arrangement is sufficient for our present purpose, we will not depart from it.

There is reason to believe that fire, heat, or caloric, is the only *permanently elastic substance* in nature. When it penetrates the pores of any body, it uniformly causes the expansion of such body. A bar of iron is lengthened by being heated, metals and other substances are melted by heat, and by heat water is converted into vapour. There is therefore ample ground for believing that all fluidity is the effect heat. The natural state of water is ice; and air itself, where there any means of producing a sufficient degree of cold, might probably be reduced to a solid mass.

As all fluidity has heat for its cause, so we find that a much greater degree of heat is requisite to keep one substance in a fluid state than another. Iron, for instance, requires more heat to keep it in fusion than gold; gold much more than tin; but much less suffices to keep wax, much less to keep water, much less spirit of wine, and at last exceedingly less for mercury (quicksilver), since that metal only becomes solid at 187 degrees below the point at which water freezes; mercury, therefore, would be the most fluid of all bodies, if air were not still more so. Now, what does this fluidity, greater in air than any other matter, indicate? It appears to indicate the least degree of adherence that can be conceived between the parts of which it is composed, supposing them to be of such a figure as only to touch each other at one point. The greater or less degree of fluidity does not, however, indicate that the parts of the fluid are more or less weighty, but only that their adherence is so much the

less, their union is so much the less intimate, and their separation so much the easier. If a thousand degrees of heat are required to keep water in a fluid state, it might perhaps require but one to preserve the fluidity of the air.

It is yet doubtful whether light consists of the same matter with the elementary fire or not. The great source of light is found to be the sun, from which it is projected to the earth in the space of about eight minutes; and as the sun is computed to be distant ninety-five millions of miles, light must of consequence travel at the rate of about two hundred thousand miles in one second of time.

Light may be reflected as well as projected. The light which we receive from the moon is only reflected from a mirror. The light of the sun is three hundred thousand times stronger than the light of the moon.

The air we inhale is composed of 21 parts of oxygen to 79 of nitrogen gas, which are mixed with vapour and small quantities of other gases.

The effects of heat in producing a noxious quality in the air, are well known. The torrid regions under the line are always unwholesome. At Senegal, the natives consider forty as an advanced time of life, and generally die of old age at fifty. At Carthagena, where the heat of the hottest day ever known in Europe is continual....where, during the winter season, these dreadful heats are united with a continual succession of thunder, rain, and tempests....the wan and livid complexions of the inhabitants might make strangers suspect that they were just recovered from some dreadful distemper. The habits of the natives are influenced by the same causes as their colour, and all their motions are relaxed and languid; the heat of the climate even affects their speech, which is soft and slow, and their words generally broken. Travellers from Europe retain their strength and colour, possibly for three or four months, but afterwards suffer such decays in both, that they are no longer to be distinguished by their complexion from the inhabitants. Here, however, this languid and spiritless existence is frequently drawled on sometimes even to eighty. Young persons are generally most affected by the heat of the climate, which spares the more aged; but all, upon their arrival on the coasts, are subject to the same train of fatal disorders. In the memorable expedition to Carthagena, more than three parts of our army were destroyed by the climate, and those that returned from that fatal service, found their former vigour irretrievably gone. Of the expedition to the Havannah, not a fifth part of the army were left survivors of their victory; climate is an enemy that even heroes cannot conquer.

The distempers that proceed from those climates are many: that, for instance, called the *Chapotonadas*, carries off a multitude of the people, and extremely thins the crews of European ships, whom gain tempts into those regions. The nature of this distemper is but little known, being caused in some persons by cold, in others by indigestion. But its effects are generally fatal in three or four days: upon its seizing the patient it brings on what is there called the black vomit, after which few are ever found to recover.

A different set of calamities prevail in some climates where the air is condensed by cold. In such places the train of distempers known to arise from obstructed perspiration, are very common—eruptions, boils, scurvy, and loathsome leprosy, that covers the body with a scurf and ulcers. These disorders are also infectious, and not only banish the patient from society, but generally accompany him to the grave. The men of those climates seldom attain to the age of fifty; but the women, who lead less laborious lives, live longer.

One fact our senses teach us, namely, that although the air is too fine for our sight, it is very obvious to the touch. Although we cannot see the wind contained in a bladder, we can very readily feel its resistance; and though the hurricane be colourless, we know that it does not want force. We have equal experience of the spring, or elasticity of the air; a bladder filled with air, when pressed, returns again, upon the pressure being taken away.

So far the slightest experience teaches us; but, by carrying experiment a little further, we learn that air also is *heavy;* a glass vessel, emptied of air, and accurately weighed, will be found lighter than when weighed with the air in it. Upon computing the superior weight of the full vessel, a cubic foot of air is found to weigh 527 grains, while the same quantity of hydrogen gas weighs no more than 40 grain. This familiarly illustrated in balloons, the ascent of which is at the present time so common in this country. The balloon ascends because the gas with which it is filled is lighter than the quan-

ity of atmospheric air which would fill he same space as the balloon itself, and the ascending power of the balloon, and consequently the weight it will carry, is in proportion to the actual difference between the weight of the gas and the weight of the air. When it is required that the balloon shall descend, some of the gas is let out of the balloon through a valve, just as water might be let out of a barrel. The gas that remains in the balloon is still lighter than the air, measure for measure, but the proportions between the gas originally contained in the balloon and the weight the balloon carries, are destroyed; the balloon with its burden becomes heavier than the air it displace, and, consequently, the balloon descends.

We learn, therefore, that the earth, and all things upon its surface, are in every direction covered with a ponderous fluid, which, rising very high over our heads, must be proportionally heavy. For instance, as in the sea a man at the depth of twenty feet sustains a greater weight of water than a man at the depth of but ten feet, so will a man at the bottom of a valley have a greater weight of air over him than a man on the top of a mountain.

If by any means we contrive to take away the pressure of the air from any one part of our bodies, we are soon made sensible of the weight upon the other parts. Thus, if we place the hand upon the mouth of a vessel whence the air has been expelled, we feel as if the hand were violently sucked inwards; this is nothing more than the air upon the back of the hand that forces it into the empty space below.

As by this experiment we perceive that the air presses with great weight upon everything on the surface of the earth, so by other experiments we learn the exact weight with which it presses. First, if the air in a vessel be exhausted, and the vessel set with the mouth downwards in water, the water will rise up into the empty space, and fill the inverted glass—for the external air will, in this case, press up the water, where there is no weight to resist, just as one part of a bed being pressed makes the other parts that have no weight upon them rise. In this case, as we said, the water being pressed without, will rise in the glass, and would continue to rise to a height of thirty-two feet. Hence we learn, that the weight of the air which presses up the water is equal to a pillar, or column, of water, thirty-two feet high, for it is able to raise such a column, and no more. In other words, the surface of the earth is everywhere covered with a weight of air, which is equivalent to a covering of thirty-two feet deep of water, or to a weight of twenty-nine inches and a half of quicksilver, which is just as heavy as the former.

It is found, by computation, that to raise water, thirty-two feet requires a weight of fifteen pounds upon every square inch. Now, if we are fond of computations, we have only to calculate how many square inches are in the surface of an ordinary human body, and allowing every inch to sustain fifteen pounds, we may amaze ourselves at the weight of air we sustain. It has been computed that the ordinary pressure of the air on a man amounts to within little short of forty thousand pounds!

The elasticity of the air is one of its most amazing properties, and to which it should seem nothing can set bounds. A body of air, that may be contained in a nut-shell, may be dilated by heat into a sphere of unknown dimensions. On the contrary, the air contained in a house may be comprehensible into a cavity not larger than the eye of a needle. In short, no bounds can be set to its confinement or expansion, at least experiment has hitherto found all attempts indefinite. In every situation air retains its elasticity, and the more closely compressed, the more strongly does it resist the pressure. If, in addition to increasing the elasticity by compression, it be increased by heat, the force of both soon becomes irresistible; and it has been well said, that air, thus confined and expanding, is sufficient for the explosion of a world.

NITRATE OF SILVER IN GONORRHŒA.

"Philip Bennett Lucas recommends the Argentum nitricum in gonorrhœa. Even during the first stage he injects a solution of ten grains in an ounce of rose-water. The first injection causes commonly at the instant violent pain, which lasts for twenty minutes, and is also felt on voiding urine. Soon after, the secretion becomes thicker and more scanty, and after a second injection disappears entirely. For the most part two injections suffice; sometimes, however, they must be renewed. In gleet this plan is useless. The syringes ought to be made of ivory or bone. The surgeon must perform the injection himself, and not confide them to the patient"—*Dierbach's Neusten Entdeckungen in der Materia Medica*, p. 539. 1837.

The London Medical
AND
Surgical Journal.

Saturday, August 26th, 1837.

NECESSITY OF PUBLIC EXAMINATIONS—THE LONDON COLLEGE OF SURGEONS—THE METROPOLITAN UNIVERSITY.

The *London Medical and Surgical Journal* was the first amongst its contemporaries, seriously and emphatically, to urge on the consideration of the medical senate of the New Metropolitan University, the expediency of adopting public examinations as the only true and honest means of ascertaining the proficiency of candidates desirous of obtaining its *diploma*, and as the only method of silencing complaints, which the most illiterate student and the best informed had equally in their power to make against their examiners, in the event of rejection.

We also pointed out that to the student himself a public examination would be even a greater boon than to his examiners, inasmuch as his feelings dared not be tampered with, and that in the event of timidity for a time taking possession of him, full allowances would be made for such; a reasonable period would be allowed him to familiarize himself to his novel situation; and the terrors and injustice of the closed-doors system, so often made available for the most nefarious ends, would sink into insignificance when deprived of the mystery which it is the object of the Examiners of the far-famed associations of Lincoln's Inn Fields and Blackfriars, for purposes too apparent, to envelope it.

Scarcely had our observations, on this infamous hole-and corner method of conducting examinations, met the public eye than we received numerous communications on the subject; some from individuals who had experienced gross injustice at the hands of the examiners—some who considered the question in a calmer mood—and, in particular, a communication from a member and a participator in the spoils of one of the associations we have alluded to. These letters, however, we refrained from publishing, not having permission from their authors to affix their names to them; and that of our valued correspondent ——, ——, we made use of effectively, without however compromising his high character and position in the slightest degree.

If further evidence were necessary to show the innate baseness of the Council of the College of Surgeons, and the tenacity with which they adhere to a system of examination discountenanced by every honourable mind, we have only to refer to their late edict, wherein that despicable junto had the daring effrontery to command that any member of the college who was desirous of giving lectures on medical science, should be driven to the humiliation of presenting himself to undergo an examination in order that he might prove to THEM—*a self-elected despicable body of monopolists*—his competency as a teacher. A proof of the *propriety* and *delicacy* of this odious edict has lately been strongly exemplified in the case of an eminent individual, who, though not far advanced in "the prime of youth," yet is possessed of sufficient professional reputation to have been selected as eminently qualified to fulfil the important medical duties of more than one of our metropolitan charitable institutions, and a man who has already largely contributed to medical literature.

The profession will rejoice to learn, and it redounds much to the credit of the

individual, that he has rejected with a proper contempt, the test by which it was proposed to ascertain his capabilities as a teacher; and we have an honest pride in stating that the new professor, notwithstanding the impediments thus cast in his path to professional fame and honour, intends to give the students of medicine in the Northern division of London an opportunity of availing themselves of his instruction.

PROFESSORSHIP OF ANATOMY IN THE UNIVERSITY OF DUBLIN.

We are informed on authority, upon which we can rely, that Dr. Harrison of Dublin is the most likely candidate to fill the chair of anatomy, vacated by Dr. Macartney. If the late Professor Quain would subscribe to the Thirty-nine Articles, and take the oath abjuration, and become a brother of the purple and orange lodges he would be appointed; but such is the intollerance of the silent sister, that were Herophilus, Erasistratus, and John Hunter candidates, they would be excluded on any other terms.—Such is the march of intellect in the far famed Trinity College Dublin.

Tempora mutantur et nos *non* mutemur cum illis.

UNIVERSITY COLLEGE HOSPITAL

LATE

NORTH LONDON.

[The following is Mr. Liston's account of his fatal case of lithotrity, as published in the *Lancet* of last week, and to which we alluded in our last. We shall offer no comment on it at present, but leave our reporters to notice it as they think proper.]

Lithotrity—Mismanagement with a Catheter—Death.

William Knox, aged sixty-one, was admitted on the 24th of June. About two years and a half ago he met with an accident, whilst on horseback, striking himself on the pummel of the saddle, for which he was cupped and leeched at the time, and was confined to his bed for a month; during this period he first experienced pain in making water, and when he took exercise he had small discharges of blood. About twelve months afterwards he passed a small stone, of about the size of a pea, from which he felt much relief. At present he complains of extreme pain at the end of the penis, extending up to the kidneys and down the thighs. He passes urine every half hour, mixed with clotted blood, sometimes stopping, then flowing again.

June 24. Mr. Liston sounded him, and found two stones in the bladder, and ordered him to drink freely of barley-water, and to have his bowels opened with castor-oil.

26. The lithotrite was introduced, and one of the stones easily crushed. The patient did not appear to suffer much pain from the process, and lost a very small quantity of blood.

Eight o'clock. The patient laboured under suppression of urine, which was mistaken for retention, by the house-surgeon then in office, whose plan of proceeding is described in the remarks made by Mr. Liston, in lecturing on the case, and reported farther on.

27. The urine very scanty; great pain in the left side, in the region of the bladder; swelling of the abdomen; bowels much confined. A dose of castor oil was given, but immediately vomited up. An enema, and a minim of croton oil, failing to take effect, the enema was repeared, and half a minim of croton oil, with two grains of calomel, was given every three hours. Pulse 90, natural.

28. Swelling of the abdomen, and tympanitic sound greatly increased; bowels still confined: extreme pain over the left side of the bladder; urine still very small in quantity, and bloody. Two drachms of carbonate of magnesia in two ounces of water, directly. Thirty-six leeches to the left side, in the region of the bladder; fomentations afterwards. Two grains of calomel and half a grain of opium every four hours. A mixture, composed of three minims of hydrocyanic acid, in four ounces of water, a table-

spoonful every third hour. Pulse, 100, and weak; tongue dry, and furred.

Three o'clock, P.M. Had a copious watery evacuation, well tinged with bile, and the purging continued every hour during the night.

29. Feels much relieved; pain greatly diminished; purging ceased at eight o'clock. Omit the hydrocyanic acid; to have some tragacanth, and liqour potassæ.

Three o'clock, P.M. Omit the calomel and opium. Six grains of hydrag. cum creta, with half a grain of opium, every three hours. Pulse 120, small; countenance anxious; extremities cold, with clammy perspiration.

Nine o'clock. Still sinking; a small quantity of gin ordered. No inclination to sleep; urine slightly increased in quantity, but still bloody; bowels confined.

30. Gradually got weaker, and died at twelve, P.M.

In lecturing on this case, Mr. Liston observed, that when he performed the operation he was ignorant of some circumstance which had since come to his knowledge. The individual who had officicated as house-surgeon, *pro tempore*, had also omitted to state some circumstances regarding the after-treatment, which materially affected the issue of the case, and which he (Mr. Liston) was now painfully compelled to mention. When he first sounded the patient he easily detected two stones, neither of which was large, and the case seemed to be favourable for lithotrity, no circumstances appearing to counter-indicate the operation, the patient himself being anxious for its performance. The urine was tested, and was found to be but slightly albuminous. They had seen at the operation that after injecting the bladder he had experienced little difficulty in introducing the lithotrite. There was a slight stoppage at the triangular ligament, but this was readily overcome by the partial withdrawal of the instrument, and passing the point lower. One of the stones was easily seized and broken up, the patient suffering little, and loosing scarcely any blood. Indeed, very little force was used or required. The patient suffered so little that the scoop was introduced twice, and several portions of the stone were seized, pulverized, and removed So completely was it broken, that the nucleus was extracted on the second introduction of the scoop. After the operation the patient, who had complained very little of any part of the process, walked up stairs to bed, unassisted. He, Mr. L., had since found that the patient had passed a very restless night previous to the operation; that he had made little urine, and was very feverish. In the reports of the case on the 27th, some very important circumstances had been omitted by the house-surgeon, who, it appears, having mistaken the suppression of urine for retention, endeavoured to introduce a cathether a long time without success. A gentleman who witnessed the proceeding thus describes it, in a letter, dated July 5th:—"I think he may have torn the urethra when I saw him; he had been some time trying to pass an instrument; there was plenty of blood; he fancied that the instrument was passed, and that he could feel it grating on some sand, but that I think that what he felt was caused by the eyes of the catheter rubbing over the sides of the torn urethra. I am certain he was not in the bladder when he fancied that he was." The catheter was again introduced, contrary to his (Mr. Liston's) orders. The parts were, after death, carefully dissected by Mr. Taylor. The urethra was severely lacerated in two parts, each admitting the point of a bougie; one passing from the membranous portion into the substance of the prostate, another from the apex of that gland, under its capsule * The bladder contained one entire stone, and many fragments of another. There was a cyst opening from the bladder, filled with puriform matter, the cellular tissue being broken down. One of the kidneys contained stones of various sizes; the other was proceeding to disorganization; the patient, therefore, could not have been cured. He (Mr. Liston) considered it proper to state these facts, both on his own account and on account of lithotrity itself, than the performance of which, as an operation, nothing could have proceeded more satisfactory. He was, however, misled respecting the state of the patient on the morning of the operation. The ill success of the case was mainly attributable to the lesions which he had named, so sure were untoward and unnecessary attempts to pass a catheter, when the bladder, was empty, to tend to an unfortunate result in such a case, the bladder being, during the operation, as they saw, occupied by a sufficient quantity of fluid, and the whole process being conducted with the utmost care and gentleness. Mr. Liston further remarked, that the operation of lithotrity, if well understood, would, in many cases, if the

the subjects for its performance were properly chosen, do away with the necessity of cutting. Patients, under a prospect of so easy a means of relief, would apply early to the surgeon, and the cure would consequently be rendered so much the easier. The instruments had been so much simplified and improved of late years, that the operation was now by no means a formidable one, and was attended with none of those dangers to which it was liable when the complicated and inefficient apparatus was first brought into use.

ANOTHER PRIVATE AND EXTRAORDINARY OPERATION IN LITHOTRITY.

On Friday evening the 18th instant, at dusk, a ladder and scaffolding were appended to the medio-anterior aspect of the *late* NORTH LONDON HOSPITAL, and all preliminaries being arranged, the master stone-cutter of the charity proceeded to remove the obnoxious calculous excrescences, which until then disfigured that region of the edifice.

Before the operation was determined upon, the opinions of the therapeutic and obstetric professors were conjointly taken. The only objection raised in the consultation was as to whether the time-serving excrescences of N.O.R.T.H. L.O.N.-D.O.N. H.O.S.P.I.T.A.L. could be better removed without injury to the OBJECT, by the *bone nippers*, the *lithotriptic machine*, or the ordinary *pile-engine*.

After a most painful and learned discussion by the *northern luminaries*, it was unanimously resolved that the ordinary gouge and mallet were the most efficient instruments for extirpating the IMPOSING characters of the disease, and for completely obliterating the TYPE of the distemper.

At half past nine o'clock P.M. the operation was commenced, and in one minute four seconds and three quarters, as ascertained by the college time-keeper, the entire was completed.

We regret to add that the result has been fatal!

Of an originally fair and sound constitution, the deceased promised a few years ago to live a long and useful life; but from being tampered with by designing intriguers, it soon fell a victim to the combined influences of avarice, humbug, duplicity, and arrogance.

The morbid parts removed, have been consigned to the care of the curator, who has expressed his ability to form from them an original and curious series of *plastic* preparations.

The following beautiful and pathetic epitaph has been sent to the stone cutter to be carved. Here lie the remains of North London Hospital.

Beneath this marble slab
Lie buried the remains,
Of Old North London Hospital
Fam'd for curing aches and pains.

Tread lightly gentle reader
O'er its skeleton of bones,
For in its day it witnessed
The cutting out of many stones.

Requiescat in pace!

EDINBURGH UNIVERSITY.

On Tuesday, the 1st of August, 105 gentlemen received the degree of doctor of medicine in this University, after having the previous day defended their theses. Of these, only one was written in Latin, a circumstance which a contemporary of yours some time ago thought fit to deplore, as evincing a sad falling off in classical knowledge. Now it was well known that formerly the theses were no more written in Latin by the candidates for the degree than they are now, the English copy being almost invariably translated into that language by individuals who received so many guineas for the trouble. Abolishing Latin composition, and Latin examinations, marks the advance of improvement in our University, as it was well know that the affected cloak of learning only served to cover the grossest ignorance, while it offered no incentive to the industrious or talented student, inasmuch as his Latin compositions were never read, and his Latin examination was a mere form. It has been an object lately with the senatus to improve the character of the theses, and with this view it was advertised that a gold medal would be given for the best production of this class. This plan appears to have been eminently successful; a large number of most excellent theses have been given in. On the graduation day Sir C. Bell, as Dean of the Faculty, announced that Dr. W. H. Madden had obtained the Medal for the best essay on cutaneous absorption. Dr. J. H. Bennett another for the best re-

port of surgical cases. Dr. J. R. Cormack, and Dr. A. S. Thomson, one each for their respective thesis. He stated that the two latter prizes had been awarded to those dissertations which contained the greatest amount of original information; but that the theses of the following gentlemen had likewise been selected by the professors as worthy of being so distinguished:—Dr. H. C. Barlow, Dr. J. H. Bennett, Dr. W. H. Madden, Dr. G. S. Newbigging, Dr. C. Chadwick, Dr. M. Satterthwaite, Dr. T. W. Curtis, Dr. — Hunter, Dr. E. C. Seaton, Dr. J. O'Brien, M. Barry.

We understand that the prize essays were all extremely good; and as one of the conditions was to print, we anticipate that the profession generally will benefit by the mass of experiments and original observations which we understand to have been displayed in the respective dissertations. The medals, much to the disappointment of those present, were not forthcoming, a circumstance owing no doubt to the anxiety of the senatus that the die about to be made for the occasion, and the medals themselves, should be worthy of the successful competitors, and the alma mater to which they belong.

The following is a list of the gentlemen, 105 in number, who received the degree of Doctor of Medicine at the University of Edinburgh, Tuesday, August 1st, with the title of their theses:—

H. C. Barlow—On the causes and effects of disease, considered in reference to the moral constitution of man.
T. H. Burgess—On paralysis.
William Brown—On morphology.
W. H. Brownson—On the nature and treatment of gunshot wounds, and their consequences.
William Bayard—On Asiatic cholera.
Robert Butler—On apoplexy.
J. H. Bennet—On the physiology and pathology of the brain.
J. H. Branfoot—On the acquired perceptions of hearing.
J. O'B. M. Barry—On endocarditis.
James Barlas—On artificial pupil.
P. J. Barry—On rheumatism.
J. E. Cummins—On ophthalmia.
G. S. Carden—On temporary insan
George Cossar—On inguinal hernia.
Joseph Cartmell—On pseudo-pathological appearances.
J. R. Cormack—On the air in the organs of circulation.
Francis Cooke—On pellagra.
J. W. Curtis—On the functions of the cœcum.
Michael Cormack—On asthma.
C. Chadwick—How far are secretion and nutrition dependent on nervous influence?
J. R. H. Couson—On nature, symptoms, and treatment of bronchitis.
A. W. Campbell—On acute pericarditis, particularly as connected with rheumatism.
Thomas Crawford—On paralysis.
Alex. Duncan—On hernia.
R. H. Davidson—On the organs and physiology of digestion.
Hugo Donaldson—On bronchitis.
S. P. C. Evans—On equivocal, comparative, and human generation.
James Edwards—On neuralgia.
John Fortune—On acute hepatitis.
J. W. Fullarton—On mortification.
George Frazer—On the connexion of nervous energy with muscular contractibility.
Thomas Gordon—On erysipelas.
F. W. Grant—On the nature, diagnosis, and treatment of aneurism; with a few remarks on the spontaneous suppression of hæmorrhage,
John Grant—What are the relative advantages of different trades and professions, as regards their compatibility with bodily health?
Alexander Greig—On asphyxia.
W. T. Geary—On the hydrated peroxide of iron as an antidote to arsenic.
G. D. Gordon—On acute dysentery.
John Houseman—On the morbid affections of old age.
A. Hunter—On on the pathology and treatment of granular disease of the kidney.
S. Hunter—A practical treatise on ruptured urethra, produced by external violence.
George Hood—On aneurism and its treatment.
William Hilliard—Some general considerations on phlebitis.
Thomas Hayle—De necrosi.
William Hey Hodgson—On apoplexy.
E. Johnson—On the anatomy of the mamary gland.
J. Johnson—On the tongue, pulse, and urine, as indications of health and disease.
Jame Jopp—On angina pectoris.
H. Kinglake—On the physiology of digestion.
G. Kennion—A sketch of some of the principal diseases which are peculiar or incident to the puerperal state.
W. D. Kingdon—On scirrhus.
P. G. Kennedy—Observations on the

general pathology of diseases of the eye, with remarks on the characters which are diagnostic of the idiopathic and symptomatic ophthalmia.
Adam Lyszeznski—On small-pox.
S. D. Lees—On the pathology of the ear.
T. H. Lowry—On tetanus.
George Lund—On the use of the thyroid and thymus glands, and of the spleen and suprarenal capsules.
George Aaron Martin—On scorbutus.
W. H. Madden—On the connexion between the muscles and nervous system.
L. M'Lean—An account of the bilious remittent fever, more particularly as it occurs in the West Indies.
Alexander Ross Morton—On dysentery.
H. Montgomery—On the origin and mode of formation of tubercles in the lungs.
W. O. Mackenzie—On the distinctive characters, classes, and treatment of those ulcers (including hospital gangrene) which have lately been prevalent in the British army and navy, on some foreign stations.
George Parker May—On croup.
James Mitchell—On scarlatina.
John Morison—On apoplexy.
J. L. Marsden—De kenothumia, or ennui.
H. R. Melville—On the effects of climate and food on man.
M. R. Mahony—Some observations on aneurism, and diseases of the heart; with case.
G. S. Newbigging—On the effusion and organization of coagulable lymph.
John O'Brian—On the hygiene of infants.
J. C. Orgile—On the morbid effects occasionally induced by the operation of mercury.
Eugene O'Neile—On vesicular emphysema.
James H. Pring—On chorea.
William Pringle—On phagedena gangræ-nosa.
J. P. Phipps—On cold affusion in croup.
Arthur Powell—On the causes of disease.
Charles Ronayne—On cancer of the uterus.
J. S. Reid—On variola.
W. A. Reeves—On delirium tremens.
E. C. Seaton—On the powers which move the blood.
William Scott — Observations upon pseudo-inflammatory affections.
R. Skerrett—On malignant or Asiatic cholera.
M. Satterthwaite—On pathological chemistry.
George Smyth—On ascites.
J. P. Shuman—On the pathology of dropsy.
John Spowart—On tetanus
William Stranger—On cynanche trachealis.
J. H. Shirreff—What advantage do we derive from auscultation in detecting pregnancy?
J. C. Sortain—On the function of the cœcum.
Thomas Stratton—On chronic rheumatism.
T. H. Shute—On fever, being an inquiry into its intimate nature and causes.
James Satchell—On the signs of pregnancy.
William Scott—On scarlatina.
Thomas R. Scott—On wounds of the thorax.
Henry Hunt Stubb—On influenza.
F. N. Slight—On injuries of the head from external violence.
H. H. Turnbull—On venous inflammation.
A. S. Thomson—Observations on the influence of climate on the health and mortality of the inhabitants of the different regions of the globe.
George F. Thomson—On croup.
William Tatlock—On hydrocele.
B. W. Wright—On the jungle fever of India.
J. G. Wood—Under what circumstances is the operation of trephining to be had recourse to?
J. Waters—On hypertrophy of the heart, and on that of the left ventricle in particular.
J. W. Wallace—On hydrocele of the tunica vaginalis testis.
James Balfour Wishart—On abortion.

SITTING OF THE FRENCH INSTITUTE OF THE 31ST OF JULY.

MECHANICS.—*New method of preventing the explosion of steam engines.*—Monsieur Bache describes, in a letter to Monsieur Arago, an apparatus for prevention for the explosion of steam engines. This apparatus is composed of a metallic stem within a tube, which descends to the bottom of the boiler. The extremity of the stem is fixed in a ring by a little transverse bar of fusible metal. The other end of the stem is fixed to the extremity of a lever with a weight hanging to it, which is kept in suspension by the transverse bar. A bell or discharging cock is placed beneath this weight, so as

to put it in action by its fall. On the temperature in the boiler arriving at a certain height, the fusible transverse bar gives way, and the stem being no longer retained by it, is acted on by the weight, and either the bell rings or the safety cock is opened. This method has been referred to the committee appointed some time since for the examination of this important question.

Navigation.—*Soundings in the Sea at great depths.*—Paper by Monsieur Champeaux la Boulaie.—Although it is of importance for the solution of many physical and astronomical problems to be able to determine everywhere the depth of the sea, yet navigators have hitherto paid very little attention to it. The only known way of determining the depth of the sea, consists in throwing into the water a leaden weight attached to a graduated cord that slips through the hand of the sounder; the diminution of the effort sustained by the hand indicates the moment at which the lead touches the bottom, and the quantity of cord run out expresses the depth, provided that the string be held vertical to the weight. This operation, to appearance very simple, is, nevertheless, complicated with so many difficulties, on the depth exceeding certain limits, that it is almost impossible to arrive at 1,800 or 2,000 metres, or French yards. Monsieur Champeaux la Boulaie analyses successively all the difficulties which present themselves in sounding to a great depth, and then seeks to determine the conditions most favourable to success. The following are the conclusions to which he has arrived:—

We cannot sound with success to very great depths, except in a smooth sea and in a dead calm. In a calm sea, and gentle wind, we shall arrive at the same result by sounding from on board a vessel, or steam-boat, which floats so as to remain immoveable with regard to the surface of the water. In this position the plummet used must be very much elongated, cast in the form of the solid of least resistance, and attached to a line whose form (says the report from which we translate,) is that of the solid described by the revolution of a logarithimic round its assymtotic axis, the abscissa being diminished by a constant number.

The line is reeved through a very light pulley, of a yard in circumference, suspended to a very delicate dynamometer, furnished at its axis with an index. It is then wound round a well constructed reel as soon as the whole has assumed a regular velocity, two observers write down, at equal intervals of time, the one the number of revolutions made by the pulley, and the other the indications of the needle of the dynamometer.

When the effort supported by the dynamometer, or the velocity of the reel, appear to the eye more or less suddenly diminished, the observations are repeated two or three times, and the lead is then withdrawn.

The moment that the tension of the line has suddenly diminished is almost exactly that at which the plummet has touched the bottom, and the number of revolutions of the pulley will give the depth in yards; if a curve be constructed, the abscesses of which represent the times, and ordinates the number of revolutions made during the preceding interval, the point at which this curve will experience a sudden inflection must lead to the same result. If, during the descent of the the plummet, the line has continued to pull in a vertical direction it shows that there are no currents, or they do not vary as far as the depth attained, and the operation then presents the greatest chances of exactitude; nevertheless, the sounding would still good enough if the line varied but litule from the vertical direction. But if the line shall have been much inclined, the observation will no longer serve to give the depth; but it will give curious notices of the force and direction of submarine currents.

The paper Monsieur Champeaux la Boulaye was referred to the examination of Messrs. Arago and Freycinet.

Palentology.—Monsieur Azema sends the fossil bones, to which he had before called the attention of the Academy, and which were found in the Commune of Sauveterre, a league south west of Lombès (Gers), near the left bank of the Save. These bones are referred to the examination of Monsieur de Blainville.

Alimentary Argilla—The analysis, by Professor Cotting, of a species of argilla in the canton of Richmond, which is sought after by numbers of persons, and especially by infants, as an aliment.

This earth, whose colour varies from deep yellow to a whitish red, is met with in masses and strata, which present undulations; it is of a very fine grain, and soft, taking a polish from the nail, and attaching itself to the tongue. When damp it gives out an argillaceous smell, precipitates itself in powder in water, and does not form a ductile paste. 100 parts furnished 31 of silex, 12 of oxide of iron,

34 of alumina, 10 of magnesia, 12 of water, and 1 by loss.

It contains no remains of animal substances, but vegetable matter is to be met with in it in a state of putrefaction and lignite. It is found united with many other minerals in several elevated situations; the purest is found in the county of Richmond. Its taste is sweetish, resembling that of calcined magnesia. Persons worthy of credit, residing in the environs of this canton, assure us that there are frequent deaths among those persons who make too frequent use of it as food.

Other Communications.—Messieurs Morisset, Durrand, and Clavaison, write that silk-worms can be fed on the leaves of the scorzonera, or viper's grass. In proof of what they advance, they send five balls of the worms nourished with the leaves of this plant. This is an experiment such as a schoolboy may make who feeds silk-worms in his writing-desk; but often-repeated attempts make us doubt of the experiment completely succeeding with only some thousands of worms. Besides, the leaf of the scorzonera is velvety, and the insect refuses to eat it until it has been previously brushed.—Monsieur Bertrami complains that in speaking of the Praries of North America, a correspondent of the Institute attributes this discovery, which belongs to him, as well as that of the sources of the Mississippi, to Monsieur Ruggles, the geologist, and Mr. Cooper, the novelist.—Doctor Guibert, forgetting that the butterflies can fly, and deposit their eggs on the branches of the vine without climbing up the stem, proposes to the proprietors of Argenteuil to wet the lower part of all the plants with train oil, mixed with one tenth part of spirits of turpentine.—Monsieur Carè informs us of the efficacy of a unique remedy for the cholera. This remedy, which he has communicated to the Neapolitan Ambassadors, consists of half a dram of eau de rabir, probably of eau de Rabel, or diluted sulphuric acid, in a quart of water, to be taken at three draughts. We have great doubts of the efficacy of this remedy, and no confidence whatever in the experience, judgment, or medical skill of ambassadors.

The original report, from which we have translated, is very carelessly drawn up, and in many places unintelligible and absurd. We have endeavoured to make the best of it, such as it is.

ON EXCISION OF THE SMALLER JOINTS.

By Dr. Gernet, of Hamburg.

Among the many improvements in modern surgery, the substitution of excision of diseased joints and of carious portions of bone for amputation of the limb, is not the least important. A considerable number of years have now elapsed since this principle was first applied to the treatment of caries of the larger joints, and, in a late number of the Hamburg Journal, we find Dr. Gernet, assistant surgeon of the Hamburg Hospital, ably advocating its extention to the treatment of caries of several of the smaller joints. He reports seven cases, which were operated by Fricke, in the hospital. In four of these, the caries affected the bones of the hand, and, in the remaining three, those of the foot. Of the former number, the disease in three affected the metacarpel joint of the thumb, and was produced in one case by the point of an awl penetrating the joint; in the second, by the cut of an axe; and in the third, it was ascribed by the patient to a wire, which, some months previously, he had drawn tightly round the thumb; but the chief cause seemed to lie in the cachectic state of the constitution. In the fourth case, the caries affected the metacarpal joint of the middle finger, and, as in one of the former instances, was caused by the wound of an awl.

In those cases in which the foot was the seat of the disease, the caries affected, in the first, the joint between the first and second phalanx of the great toe, and could not be ascribed to any evident cause; in the second, no caries existed, but a large exostosis, which was attached to the head of the first phalanx of the great toe, greatly incommoded the patient. In the third case, the caries affected the metatarsal joint of the great toe.

In all of these cases, the operation was performed by removing the extremities of both bones; and this was judged the more advisable proceeding, even in the case of exostosis, where no lesion of the opposite articular surface existed. The ends of the bone were then approximated as nearly as could be done without much difficulty, or causing great uneasiness to the patient, and retained in this position by a peculiar apparatus Union by the first intention was tried in two instances, but afterwards abandoned, and the wound

was stuffed with charpie. Torsion was employed to arrest the hæmorrhage from the mouths of bleeding vessels; a practice which seems to be followed in all operations in the Hamburg hospital.

It has been advanced against the operation of excision of the smaller joints, that the time required for the cure, and the length and pain of the operation, were more than an equivalent for any advantage which could be derived from a shortened and anchylosed finger, and which perhaps would prove a worse than useless appendage to the patient. We shall therefore examine the results of the seven operations. Of the four cases in which the hand was affected, the success in three was complete. On an average, five and a half weeks were sufficient for the union of the wound and solidification of the bone; and all three were capable of returning to their work at the end of seven weeks. Two of them, in whom the metacarpal joint of the thumb had been affected, regained completely the use of the finger; and the other, the fourth case, was fast regaining the use of the finger when he left the hospital. In the third case, the wound healed slowly; but the patient was unable to use the thumb, and was dismissed at the end of three months, in rather an unsasisfactory state, Of the foot cases, the first was able to use the extremity at the end of five weeks; but, in the second, the cure was retarded by necrosis of a portion of bone t ll the end of the tenth week. Four weeks sufficed to effect the cure in the third.

In the first set of cases, the operation, including the time occupied in dressing the wound, lasted from fifteen to twenty-six minutes, the two extremes. In the second, ten, or at most fifteen, minutes were required. In no case were bad consequences, which could be ascribed to the nature of the operation observed to follow. *Zeitschrift für die gesammie Medicin.* Band iii, heft 4. 1836.

IMPORTANT TO ENGLISH MEDICAL MEN.

A very important decision has been given by the Court of Arras, in favour of English medical men wishing to establish themselves in France for the purpose of carrying on their profession. It was reported some time back in the London journals, that an order had been issued by the faculty of medicine in Paris, prohibiting English medical men practising at Boulogne, St. Omer, Calais, Dunkerque, and other parts of France, inhabited by English tourists, which decision gave rise to a trial by Dr Campbell and other medical men residing at Boulogne, and an appeal was made to the Court of Assizes of St. Omer and Arras, when the court, after a long discussion on the subject, decided, "That any English medical man who has passed the College of Surgeous in London, Edinburgh, or Dublin. and can produce his diploma as a guarantee that he is duly qualified, shall be allowed to practise his profession in France amongst his compatriots, by submitting to the usual regulations specified by the Faculty of Medicine towards foreigners;" which decision has been confirmed by the Court of Assize of Paris and the Faculty of Medicine.

REVIEWS.

The Fallacy of the Art of Physic as taught in the Schools; with the developement of New and Important Principles of Practice. By Samuel Dickson, M. D. Edinburgh: Adam and Charles Black: London, Longman, Rees and Co. 1836.

The paucity of new medical works for the last five or six months, the relaxing effects of the present season both on mind and body, and our anxious desire to afford some amusement to our readers after the toils and labours of a long winter's campaign, will, we trust, serve at least as some apology for our presenting them with a few extracts from the funny production above noticed. The work is dedicated to the Medical Officers of the Army, who are complimented by the author (himself a Medical Officer), as being "alike free from the intolerance of prejudice, and that petty spirit of self interest which so often, in civil life, militate against improvement; their liberal manners and cultivated minds having ever ensured to novelty a hearing, and to merit a proper appreciation." Whilst we are ready to admit this exemption from prejudice on the part of the Medical Officers of the army as generally true, a glance at our authors work obliges us to deny the universality of such exemption, inasmuch as we scarcely remember to have any where witnessed more blind prejudice against established principles and high authority, and that authority sanctioned by something more than mere time, in

any production than in this of Dr. Dickson's.

The Doctor commences his work by bewailing and bemoaning the sad and dire effects of the conflicting opinions of the Medical Profession on disease, and on the melancholy fact, that it is much more rare to find its members in unison than at variance in their ideas of the same disorder. "Two physicians," he says, "meet in consultation upon a case. Agreeing in their definition, they are at issue on the treatment; recommending remedies so opposite, the astonished is unable to comprehend a reason for such difference of practice." "In another—while both may cotncide in opinion as to the remedy, they will dispute about the name, &c." Where, in the name of goodness, has the doctor been practising, that he has found cause for such complaint, about the discrepancy of medical men on the names and treatment of diseases? That such grounds of complaint may have existed some time back we are free to confess; but surely among regularly educated physicians of the present day, no such contradictory views, respecting either the nomenclature, or treatment of disease can be found. "There was a time," the Dr. says, "when we could have sympathised with the disputants." Kind hearted soul! Aye, Dr. and there *is* a time, and that time is the present, when we could sympathise with such downright innocence or total unacquantance with the advanced state of pathology of the present day, were not such ignorance accompanied with another quality, which is indeed its inseperable attendant, and which is, to say the least, undeserving of sympathy. The Dr. premises to show, that, instead of many maladies, man, *properly speaking*, is "the victim only of *one*, and that this one, in the first instance, has no relation to organic change as a cause." Gentle reader! what think you is this *one* malady? neither more nor less than FEVER—REMITTENT OR INTERMITTENT, which, according to the sagacious author, "comprehends every shape and shade which disorder can assume." We believe the grand feature of Hahnemann's doctrine of Homæopathy is, that all diseases may be referred to one—and that one is *the itch!!* These medical Newlights are certainly queer fellows! "The bigoted and selfish will repudiate a doctrine alike repugnant to their prejudices and interests," says the doctor. Yes, doctor, and the intelligent and experienced will repudiate your doctrine, which is alike repugnant to common sense and every day observation. Only think of the author's modesty when he tells us, that "Hippocrates had at least a glimpse of this truth, namely, of the unity of disease. It was reserved for the doctor to see this truth in all its splendour, and in all its beauty.

The following is the author's description of HEALTH:—

"The body in this state maintains an equable and medium temperature throughout; the voluntary, and other muscles, obey with *alacrity* (the devil they do) the several necessities that call them into action. The mind neither sinks nor rises but upon great emergences (such emergencies, we suppose, as that which stirred up the doctor to write the book now under consideration); the respiration easy, and continuous, requires no hurried effort—no lengthened sigh. The heart is equal in its beats, and not easily disturbed; the appetite moderate and uniform. (We must say that if this "continuity of respiration," and this "equality of the heart's beats," be essential to health, it were high time for us to be looking out for a doctor, for in consequence of all we have laughed from perusing the author's book, we have got a dreadful hiccup—but to proceed.) At the appointed time and occasion, the various secreting organs perform their office. (If the doctor includes the *excreting* organs in this list, we could satisfy him to a demonstration what dire mischief his book may produce, by disturbing and interfering with the *regularly appointed* time and occasion for these organs performing their respective functions, *verb. sat.*) The structures of the body, so far as bulk is concerned, remain unchanged, their possessor being neither cumbered with obesity nor wasted to a shadow. (What an ass Horace was, when he enumerated among the blessings of life, "Omnia præter ingenium pinguia." The *excepted* part of Horace's prayer appears to have been preferred by some people, or at least to have fallen to their lot.) "His sensorium is neither painfully acute nor morbidly apathetic—(there's physiology and metaphysics with a vengeance)—his sleep is tranquil and dreamless,"—If it be necessary to health to have our waking hours "dreamless," the doctor's health must, we fear, have been in a bad way whilst he was writing his book.

Next comes the doctor's definition of *Disease*, which is described as "an *increase* or *diminution* of the proper functions of health."

"The temperature of the body being in the first place deranged, the patient complains of partial or general heat or cold; his muscles, less under the control of their respective influences, become tremulous, spasmodic;—or wearied, palsied, the functions of particular muscles cease. The breathing is hurried on slight exertion, or it is maintained slowly and at intervals, and with a long occasional inspiration, that scarcely makes up for interrupted pulmonary action. The heart is quick, palpitating, or languid and remittent in its beats; the appetite craving, capricious, or lost. The secretions are either hurried and increased in quantity, or sluggish and suppressed; the body wastes, or becomes in part, or whole, preternaturally tumid and bloated. Alive to the slightest stimulus, the patient is easily impassioned or depressed; his mind, comprehending in its various relations every shade of unreasonable sadness or gaiety, prodigality or cupidity, vacillation or pertenacity, suspicious caution, or too confident security;—with every colour of imagination from highly intellectual conception, to the dream-like vagaries of hallucination His sensations are perceptibly diminished or increased. Light and sound, for instance, confuse and distract him. Like the soft Sybarite, a rose-leaf ruffles him. With the smallest increase of temperature he becomes hot and uncomfortable, and feels chilled and shivery in the lightest breeze; or, as you sometimes behold you in extreme age or idiocy, equally insensible to excess of light, sound, heat, or cold. His sleep is broken, crowded with dreams, and easily interrupted, or so perfectly lethargic it is difficult to rouse him."

The doctor seems to have prepared himself for writing on pathology, by studying the novels and romances of the 17th and 18th centuries. Where else are we to suppose he could have found such tender and touching terms as the "soft sybarite, ruffled by the rose-leaf," and those other "dream-like vagaries of hallucination?" What a tranquillising and soothing effect the perusal of the above description of the sick man must have on us this hot weather, where he is represented as "chilled and shivery in the lightest breeze;"—that one line has actually served us instead of a glass of iced cream.

Nor does the author allow those coarse minded fellows, the morbid-anatomists, to escape scot free—men, who "hoping to find the origin of every disorder made manifest by the scalpel, are ever mistaking effects for causes. Loth to believe that *death* can take place without even a palpable change of structure, these direct their attention to the minutiæ of the dead, and finding in their search some petty enlargement, some trifling engorgement, or, it may be, some formidable tumour or abscess, hastily set this down as the first *cause* of a disease, *of which it was only a developement*."

What a large stock of ignorance of the proper end of pathological anatomy, must have fallen to the lot of that man who could write such trash!

The dietetic gentry next come in for their share,—men "who, with the quantity or quality of our food or air, associate every disorder." Among these poor Mr. Abernethy gets a knock, "who invariably pointed to the stomach and bowels as the cause of every disturbance," forgetting that a passion or blow could alter the secretions of both.

In yepleping disease the author seems determined to keep at the safe side of the bush; for he would term every disorder, "Loss of Health." However, in order to satisfy the reader, who may not rest without a medical name, he will call it "*Fever*, aye, and *Remittent*." And the sapient reason for this latter nomenclature we shall give in the author's own, own words:—"For," says he, "there is no state, morbid or otherwise, which can be said to be constantly and unremittingly present in the human body. What is *life*, but a series of alterations? In health, man rests from his labour: he sleeps; he wakes to sleep again; his lungs now inspiring air, now expelling it; his heart successively dilating and contracting; his blood brightening in one set of vessels only again to darken in another; his food and drink nutritious one hour, to become excrementitious the next; in a word, all his appetites and necessities periodically alternating with each other. Nay, is not the sum total of our common lot a succession of petty joys and sorrows, hopes and fears? The very process by which we first come into the world, *parturition*, is a succession of pains and remissions."

There is a reason, gentle reader, for calling every disease to which flesh is heir, by the term *remittent fever*.

The author, after endeavouring to prove the unity of disease, by showing that they are all "variations of fever and nothing more," general or partial increase or diminution of temperature being the insepera-

ble concomitant of all; and after trying to establish this by instancing in mania, in which the phenomena were never wanting, at least in any of his patients, except during the lucid interval, states that "the same remark attaches to palpitation and temporary cessation of the heart's action, diseases commonly misunderstood, and as constantly maltreated." "That bauble of Laennec—the stethoscope," he says, "which the reader will pardon me for holding in heterodox contempt, is of course employed. The very application of the instrument to the chest deranges the action of the lungs and heart. The patient's attention, in most instances, calling off the influence of the brain, by alarm or otherwise, from the functions of the body."

Now, ye stethoscopists, what is to become of you, after all your toiling in the sick wards of hospitals, endeavouring to train your ears to catch those nice shades and settle differences which serve to mark the morbid from the healthy sounds of the heart and lungs!! Dr. Dickson has blown yourselves and your baubles, and given ye to the winds, by one dash of his powerful pen. We are so overpowered here (for we too have the misfortune to be one of you), that we can proceed no farther; we must consign the remaider of the curious production to other hands, not however without assuring the author, in sober seriousness, that we leave him more in pity than in anger.

BOOKS FOR REVIEW.

Inaugural Dissertation on the Physiology and Pathology of the Brain. By John Hughes Bennett, M.D., President of the Royal Medical and Royal Physical Societies; Vice-President of the Anatomical and Physiological Society of Edinburgh. Edinburgh: Carfrae and Son. 8vo. pp. 80. 1837.

Eloge upon Baron G. Dupuytren, &c., &c. By E. Pariset, Perpetual Secretary at the Royal Academy of Medicine. Translated, with notes, by J. I. Ikin, Surgeon, &c. London: Churchill. 8vo. pp. 60. 1837.

Notice of Patents granted to Joseph Amesbury, of Burton-crescent, in the County of Middlesex, Surgeon, for certain Apparatus used in the treatment of Stiffness, Weakness, or Deformity of the Spine, Chest, or Limbs; accompanied with Practical Remarks and Illustrations, by the Patentee. London: Longman and Co. 8vo. pp. 24. 1837.

TO CORRESPONDENTS.

Inquirer.—In the event of an action at law, the editor would no doubt at once give up the name of the operator, as well as of the individual who drew up the report.

T. Newcastle.—The case of Dr. Knott is most interesting at the present moment. Could our correspondent oblige us with an authentic copy of the minutes, and of the reprimand given to the cutting surgeon?

W. X.—Must surely have been aware that his communication contains no less than six libels. The proposed indemnity would be of no avail.

S.—John Hunter operated for the first time for popliteal aneurism, by tying the femoral artery, in 1784.

Medicus.—There are cases in which a single grain of the extract of Belladonna taken into the stomach, has been known to dilate the pupil.

A Practitioner.—The best mode of administering the hydriodate of potass, will be found in the Formulary just published.

An Army Surgeon.—The reflux-motatory movements may be employed in all dislocations, and at any period. Preparatory frictions, with veratria, might be highly advantageous.

Tremor need feel no hesitation in presenting himself as a lecturing candidate.

A Modeller.—The casts alluded to may be had at the plaster of Paris manufactory, in Great Russell-Court, opposite to Drury-lane, Theatre.

Lithototrists.—The most celebrated physiologists are decided in their opinion, that only a very small portion of a fluid (and by no means a quart) injected into the vesica urinaria, could be rapidly absorbed in a few minutes. It must have meandered into the cavity of the abdomen, as not a drop passed by the catheter, introduced soon after the fluid was injected.

All communications and works for review to be forwarded, (carriage paid) to Dr. RYAN, 4, Charlotte-street, Bloomsbury-square.

THE

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LECTURES ON DISEASES OF THE SKIN,

Annually delivered in Paris,

By M. Biett,

Reported by MM. Cazenave and Schedel.

ROSEOLA.

(A fugacious anomalous eruption.)

Roseola is a non-contagious fugitive exantheme, characterised by rose-coloured spots, not prominent, variously figured, the appearance of which is in general preceded and accompanied by febrile symptoms.

All the points of the surface of the skin may be simultaneously the seat of roseola; in some cases it is developed on some regions only, on the trunk, on the extremities.

Its course is always acute, but varies according to the subjects, according to the cause which has produced it, and the diseases which it accompanies.

Its duration varies, in general, from twenty-four hours to a week.

Symptoms.—In very young children an eruptionis sometimes observed of numerous spots, nearly circular, very close to each other, and of a deep rose-colour; they are from four to six lines in diameter, and disappear in the space of from twenty-four to thirty-six hours: their appearance is generally connected with some gastro-intestinal irritation.

A similar eruption is sometimes observed at the time of dentition; then, after vomiting, fever, diarrhœa, and sometimes slight convulsions, they are observed to appear on the surface of the body irregular rose-coloured spots, very distinct, though very close to each other. They often disappear in the space of twenty-four hours; in some cases they cease and return alternately during several days.

The most intense variety of roseola, is that which prevails principally in cities. (*Roseola estiva*, Willan.) It is most frequently preceded in children by alternations of shivering and heat, by depression, headache, slight delirium, and even convulsions; there is, at the same time, heat of skin, thirst, loss of appetite, constipation, or diarrhœa. The eruption appears from the third to the seventh day, dating from the developement of these symptoms, It appears at first on the face and neck, whence it spreads, in the space of from twenty-four to forty-eight hours, over the rest of the body; the redness of the spots is deeper, their form is more irregular than that of measles, and this red colour soon changes into a deep rose tint. The patient, at the same time, complains of severe itching, continued fever, and deglutition is frequently painful. The course of this eruption is very irregular; there may be total absence of the febrile symptoms. The duration is from three to four days; it disappears without perceptible desquamation. Under some circumstances it disappears soon to return, and then its duration may be prolonged.

A similar eruption may be observed to show itself in autumn (*roseola autumnalis*, Willan), and differs from the preceding only in the somewhat greater dimensions of its spots, their seat on the upper extremities, and the absence of fever.

A rather extraordinary variety of roseola is that wherein almost all the regions of the body are covered with rose-coloured spots, in the form of rings (*roseola annulata*, Willan), with central areas still retaining the colour of the skin. These rings, the diameter of which is, at first, about one or two lines, become successively enlarged by having a colourless space in the centre, which is sometimes of considerable size, and sometimes very

limited; sometimes two, and even three, rings reciprocally surround each other, whilst the skin retains its natural colour in their intervals. This variety is chiefly to be observed on the abdomen, below the kidneys, along the buttocks and the thighs. The duration of this eruption is short when it is accompanied with fever; at other times it may continue for an indefinite length of time; in the latter case it often accompanies chronic affections of the digestive passages.

Causes.—Roseola may appear in individuals of all ages, and in either sex, but it is generally observed in children and in females; it is more frequently seen in summer and in autumn than in the other seasons. It may attack the same individual several times. Under some circumstances it seems to prevail epidemically; and M. Biett has observed several epidemic attacks of it, at the dispensary of the Hospital Saint Louis, in very hot summers. Roseola may precede the eruption of small-pox, whether natural or inoculated; in some children it becomes developed on the ninth or tenth day after vaccination. The first dentition, the ingestion of cold drinks, the body being covered with sweat, too much exercise, are frequent causes of the appearance of this exantheme, which may often accompany a gastro-intestinal irritation in children.

Diagnosis.—Roseola has frequently been confounded with *measles* and *scarlatina;* however, in roseola, the spots, which all, more or less, approach the circular form, are circumscribed, of a deep rose-colour, broader than those of measles, smaller than those of scarlatina. Besides it is not contagious. In measles the spots are small, irregularly semilunar, of a bright red colour; those of scarlatina are broad, and of a raspberry colour. Both are contagious, and their general symptoms are characteristic; still the most experienced practitioner may be deceived, particularly at the commencement.

The greater extent of the rings, and the absence of vesicles, distinguish roseola by multiplied rings, from *herpes iris.*

Prognosis.—The prognosis of roseola is never bad; the coincidence of some internal diseases could alone render it more unfavourable.

Treatment.—In all cases, strict attention to regimen, diluent drinks, moderate temperature, and rest, are the only means necessary to be employed in the treatment of this disease. The roseola which develops itself in vaccinated subjects, requires no particular treatment. In cases of complication with any essential organ, it is to the latter that the treatment should be directed.

MEASLES.

(Rubeola—Morbilli.)

Measles is a contagious exantheme, accompanied, at its onset, by coryza, cough, and fever; indicating itself externally by small red spots, slightly elevated, at first distinct, and which, by becoming mixed together, soon assume an irregularly semilunar form, and leave between them small intervals, where the skin is entirely healthy.

The course of this disease is always acute; its duration is from eight to ten days; but some symptoms very often continue for a longer time. With respect to the duration of the eruption, properly so called, it is from three to four days.

Symptoms.—The invasion of measles is marked, in the majority of cases, by a state of general indisposition, lassitude of the limbs, alternations of shivering and heat, nasal hemorrhage and vomiting. Soon after the following symptoms are observed; greater or less acceleration of the pulse, heat of skin, sneezing, coryza, lachrymation, discharge of limpid mucus through the nose, cough frequent and dry, slight angina, thirst, anorexia, nausea, tongue white and moist, constipation, urine scanty and red, headache, drowsiness, and sometimes convulsions in children.

These symptoms are developed in the first forty-eight hours; their intensity, as well as that of the fever, increases from the third to the fourth day; there is then intense heat of skin, general moisture, sweats, acute sensibility of the conjunctiva and eye-lids, coryza, hoarseness, fatiguing cough, dyspnœa more or less developed, redness of the tongue, sometimes vomiting, headache, and occasionally temporary delirium. The uvula and velum pendulum palati are now covered with small red spots, which soon become confluent.

Towards the fourth or fifth day, small red distinct spots, of a circular form, slightly elevated, as if papular, appear on the forehead, chin, nose, and cheeks; sometime after the neck, chest, trunk, and extremities are covered successively with the same kind of eruption. The spots become enlarged, they are slightly pro-

minent, and resemble flea-bites in form. Sometimes there are observed towards their centre small vesicules; their number soon increases, and, on combining, they form larger spots, of an irregularly semi-lunar form, presenting between them small spaces in which the skin retains its natural colour. In some cases, chiefly on the face and hands, an uneven surface is felt on passing the finger over the eruption.

The redness of the spots generally attains its maximum about twenty-four hours after their appearance, and the eruption is usually terminated in the space of thirty-six hours. The face is often very much swollen at this period, and in some cases the swelling of the lids obstructs vision. After the sixth day of the disease the redness diminishes on the face, whilst it increases on the other parts of the body. On the seventh day the eruption begins to disappear, and from the ninth, slight yellowish spots indicate the place which it occupied. The disappearance of the exantheme, which then takes place in the same order as its developement, is followed by a desquamation more or less marked, generally accompanied by intense itching.

Far from diminishing in proportion as the eruption advances, the heat, thirst, coryza, cough, etc., are rather increased; but the pulse becomes less frequent; these symptoms generally cease according as the eruption disappears. The cough usually continues longer than the other symptoms; sometimes nasal hemorrhage is observed at the termination, and frequently a slight diarrhœa supervenes, which seems to accelerate convalescence.

Such is the most usual progress of measles; but in some cases the eruption scarcely appears, whilst in others it is very extensive. Sometimes the redness of the spots is very bright; sometimes, on the contrary, it is scarcely marked.

Measles may be complicated with different diseases. It may become developed in an individual simlutaneously with small-pox, but then it always happens that one of these eruptions suspends the progress of the other. Curious facts of this kind are to be found in Hunter. It is seldom accompanied with petechiæ; but, as has been frequently observed by M. Biett, the spots may assume the colour and form of *purpura simplex*, and then they no longer disappear under the pressure of the finger. The complications which chiefly deserve to engage the attention of the practitioners are, cerebral affections, which are often times followed by serous effusions into the ventricles; pulmonary, as also gastro-intestinal inflammations. It is in these cases that the symptoms called ataxic and adynamic become developed.

Croup is a very serious complication, and fortunately not very common. Divers eruptions, either of a vesicular, bullar, or pustular character, may accompany measles.

Convalescence, independently of these complications, which may interfere with it, may present a variety of different diseases: thus, obstinate chronic ophthalmia may present itself, as also different inflammations of the mucous membrane of the air-passages, otitis with deafness, chronic inflammations of the lymphatic vessels and glands. In persons disposed to phthisis the developement of tubercles seems favoured by the continuance of the catarrh consequent on measles: in fine, convalescence from this affection may be retarded, as well as that from scarlatina, by acute dropsy; a phenomenon however more frequently observed to follow the latter disease.

In the majority of cases, measles following a more or less regular course terminates in a return to health. But sometimes the patients die, and then death may be attributed to one of the complications of the disease: thus, in these fatal terminations, we find, on opening the body, more or less palpable traces of inflammation or congestion: the brain, lungs, and stomach are the organs which more frequently present these lesions.

Causes. Measles recognizes for its cause an unknown morbific principle which is transmitted by contact and infection, and which, in general, exercises its influence on the system but once during life. The observations which would tend to show that inoculation of the blood of persons affected with measles may communicate it, are anything but conclusive.

Measles is developed in all climates; it prevails almost always epidemically. In some epidemics the cause may, in some persons, develope only coryza, and symptoms of irritation of the pulmonary mucous membrane; and in some rare cases, the exantheme appears unaccompanied by these symptoms. Such persons are not exempt from a second infection. No age is exempt; but more generally it attacks young persons. It prevails more frequently during winter, and chiefly at the beginning of spring, than in the other seasons.

The appearance of the disease generally takes place from the tenth to the fourteenth day of the infection.

Diagnosis. The progress of the disease, the nature of the symptoms, and the character of the exantheme, are always sufficient to distinguish measles from *scarlatina*. In measles, the symptoms of incubation precede the eruption by three or four days; the spots are smaller, of a bright red colour, irregularly semilunar, and they leave between them intervals of healthy skin. In scarlatina the eruption comes out sooner, the spots are larger, irregular, and have a raspberry tint.

As the eruption of scarlatina does not disappear uniformly, but at intervals we find towards the end of the fifth day, small irregular spots, which might be readily confounded with those of measles.

In fine, there are cases where the diagnosis is really very difficult; such are those where large spots of a uniform red colour cover different parts of the body, and where the symptoms of irritation of the mucous membranes approximate very nearly to those belonging to scarlatina. In such cases we must have regard to the prevailing epidemic, and to the predominant symptoms of the disease, the circumstance of a former infection will not prevent the physician from instituting an attentive examination; for it is proved that the same individual may be a second time affected with measles.

With respect to *roseola*, the deep rose colour of its spots, their accurately rounded form, their size, and its non-contagious character, readily distinguish it at a certain period; but at the onset, when the ordinary symptoms of measles are wanting, they may be readily confounded

Again, the different inflammations which may complicate measles will be met with in their proper characters: only it should be observed that their course is sometimes insidious, and requires great attention.

Prognosis. Measles is not in general an alarming disease, but it may become so in several cases: it is chiefly to be dreaded in women who are pregnant or who have recently been confined, and in individuals exhausted by previous disease. In forming a prognosis, we should take into account the general character of the prevailing epidemic; the greater or less severity of the accompanying lesions, and the nature of the affected organs must chiefly serve as our basis.

The appearance of petechiæ, a premature eruption, its abrupt disappearance, coinciding with much fever and oppression, are unfavonrable.

Treatment. Strict regimen, rest, a well regulated temperature, diluent and mucilaginous and tepid drinks, the inhalation of an emollient vapour, and taking care to guard the eyes from too strong light, constitute the treatment in the ordinary course of measles.

The employment of emetics given either for the purpose of favouring the eruption, or in order to relieve gastric disturbance, is general useless, and may even be dangerous; the nausea and vomiting which patients experience in the majority of cases generally disappear with the other symptoms. It should be restricted merely to cases where the measles is complicated with croup. However, in some instances, we have observed the giving a few grains of ipecacuanha drive out the eruption with some rapidity and force. The constipation which exists at the commencement is attended with no inconvenience; at a subsequent period, if it should exist, it might be removed by means of simple lavements.

Should the eruption not come out freely, or should it disappear suddenly, diaphoretics should be employed; the patient should be put into a warm bath to which some flour of mustard should be added, or what is still better, we should give a vapour bath, if it be within our reach.

But when the eruption is delayed too long in coming out, and when at the same time the fever increases in severity, there is some reason for dreading the developement of some internal inflammation, and in this case we should hasten to apply a remedy to it.

We shall now pass in review the therapeutic means which may best attain this end.

Among those, *blood-letting*, whether general or local, holds the first place. In employing it, it is necessary carefully to distinguish the symptoms, which naturally accompany the disease and diappear with it, from those which depend on an internal inflammation, and which may more or less compromise the patient's life. Thus, during the eruption there is often much disturbance, and pains in the chest; the cough becomes very troublesome, the oppression increases, and auscultation detects a subcrepitous râle more or less extensive: however it almost always happens that these alarming symptoms disappear spontaneously, and with the appearance of the eruption.

But if they continued we should have

recourse to general or local bleeding, and the quantity of blood to be taken should be proportioned to the strength of the patient and the nature of the symptoms.

Before the appearance of the eruption, when there exist evident signs of pneumonia, or gastro-intestinal inflammation, or else when there is coma, stertorous breathing, and at the same time intense fever, the disease should not be left to nature, we must have recourse to bleeding.

In young children the application of a few leeches to the temples, behind the ears, to the epigastrium or anus, may be advantageously substituted for phlebotomy. In adults or young persons it is often very useful to employ both general and local bleeding simultaneously. Oftentimes after a bleeding performed in such cases we see the eruption come out, and at the same time the symptoms diminish in severity. The time at which we have recourse to bleeding, is particularly important; this means will be so much the more effectual, the nearer we employ it to the onset of the accompanying inflammation; at a later period, when nature is oppressed under the violence of the disease, and the different organs have been for a long time the seat of considerable congestion, it is far from being useful, and it may even accelerate the fatal termination. In a word, the employment of blood-letting is a point of great moment, it should not be forgotten that we must regard it as an exceptional mode of treatment, whose object is to combat inflammations, and alarming symptoms, which may aggravate the measles, and not to interfere with the coming out of the exanthemе.

Purgatives have, perhaps, been too much extolled in the treatment of measles; the gastro-intestinal inflammations, which so frequently complicate these diseases, should make us reserved in their employment. However they may produce good effects in cases of meningo-cephalite, of pneumonia, severe angina, or croup; they should then be employed conjointly with bleeding. The purgatives to be employed are senna, jalap, calomel, castor oil, &c.

Towards the ninth or tenth day, especially when the ordinary diarrhœa does not take place, cathartics are often employed, syrup of peach flowers, manna in tears, soluble tartar; but they are chiefly indicated when the exanthemе beginning to decline.

Sinapisms and blisters should be employed with reserve; they may act usefully in certain cases by recalling the exanthemе when it is going in.

Lotions with cold water, when the skin is hot and dry, have been extolled by respectable English practitioners. When speaking of the treatment of scarlatina we shall recur to the use of this means, which is probably less applicable to measles, as is observed by M. Guersent, in consequence of the frequent complication of pulmonary inflammation.

With respect to tonics, such as generous wine, bark, camphor, &c., they are very rarely fit to be employed; their employment at least requires great discernment. We may have recourse to them when the pulse is small and very weak, the skin cold, and the eruption pale or livid.

They should never be employed when the skin is dry and burning, notwithstanding the appearance of adynamic symptoms.

During convalescence some warm baths should be used, great care being taken to avoid catching cold; if cough still continues, we should prescribe some laxatives, opiates, a blister either to the chest, or on the inside of each arm. A slow fever sometimes sets in, and the most assidious care becomes necessary. In fine, in cases of obstinate diarrhœa, opiates, demulcents, strict regimen, a blister on the upper part of each thigh, or on the ileocœcal region, are so many means which may become useful.

The prophylatic treatment consists solely in separation from those already labouring under the disease. Though it is not known at which time the contagion is no longer to be dreaded, it is prudent to continue the precautions even beyond the twentieth day.

LECTURES ON SURGERY.

By John Hunter, F.R.S.

Strength and weakness of the constitution, or of the part affected, will produce very different effects in inflammation. Strength produces good effects, and renders the disease more manageable, for it lessens irritability. Inflammation is most manageable in parts in the following order: muscles, cellular membrane, and skin, and the more so the nearer the source of circulation. In other parts, as bones, cartilages, ligaments, &c, which have but little power in themselves, it is less manageable, though the constitution be good, for the constitution feels con-

scious of the weakness of these parts, by which affection of the constitution they become further weakened. In vital parts inflammation also is very unmanageable, though these have power in themselves; but in consequence of their being affected, the universal health is destroyed, and hence the disease is less manageable. If the stomach is inflamed, no operation of the body can go on well, the powers of restoration becoming weaker than ever; hence the greatest danger is to be apprehended.

Strength of the constitution and parts affected, when under inflammation, produces the following effects: viz. a more ready and quick termination, whatever it be. Thus, a wound in a healthy constitution unites more readily by the first intention; adhesive inflammation more readily terminates by resolution. If inflammation have got beyond the first stage, it passes sooner on to the suppurative inflammation; nature going through her operations with greater facility and dispatch in such a state of constitution.

Weakness of the Constitution and Parts.—When a wound is made in a person of a weak habit, the union is more difficult, and the inflammation is more likely to continue; and this not from there being a greater disposition to inflammation, but from want of a power and disposition to heal, nature needing greater and longer exertions to produce the intended effect.

In this state of the constitution and parts we often find that parts seem hardly capable of taking on either adhesive or suppurative inflammation; and in some of these habits inflammation will hardly even follow a solution of continuity. As in dropsy, I have observed that the puncture made by tapping or scarification will hardly heal; a degree of inflammation does take place, but not sufficient to procure a healing of the wounds or suppuration, but mortification soon comes on. If in such a constitution a wound is made, the blood not coagulating sufficiently to heal it by the first intention, dies, and becomes an extraneous substance, causing irritation; suppurative inflammation succeeds, and often mortification, which mostly proves fatal.

Effects of Inflammation on the Constitution.—The sympathy of the constitution upon an act of violence to a part, is probably the most simple act of a constitution. But this varies in different constitutions, because all constitutions do not sympathize equally. It will vary according to the stage of the inflammation, and according to the disposition of the parts inflamed.

We find the effects of inflammation on the constitution as various as any other circumstances, which appear to arise from the following causes: first, from the the nature of the constitution; secondly, from the nature of the inflammation, whether common or specific; if common, according to the kind, although I believe specific irritations do not produce much variety in the constitution, except the plague, which entirely changes it, and such as by their long continuance weaken the constitution, as lues, when of long standing; but this will be similar to any lasting disease, for at first it certainly does not affect the constitution so far as to alter the disposition of a wound made on any part; thirdly, from the nature of the part inflamed, whether vital or otherwise; and, fourthly. from the different situation of similar parts, as of the muscles or cellular membrane in the legs or arms, &c.

In inflammation we have seldom more than the continous or the universal sympathy, but sometimes the remote. The continuous causes the inflammation to spread. The general is when the constitution becomes affected. The remote is seen in pain of the shoulder, from inflammation of the liver.

As the effects which inflammation has on the constitution are by sympathy, they will be in proportion to the readiness it has to go into that action; and this is much greater in some constitutions than others: moreover, every constitution sympathizes more readily with some parts than with others. The kind of constitution least affected is generally the most healthy where sympathy hardly takes place, the surrounding parts even seeming hardly to feel what is going on in those nearest them.

The nature of the inflammation produces, I believe, but little variation in these effects; for of whatever kind, the sympathy will be in proportion to the violence of the inflammation, and its rapidity. Hence as the inflammation which produces healthy suppuration is more rapid, it generally produces more violent effects on the constitution than any other.

The effects which inflammation has on the vascular system, and which are chiefly discoverable by the pulse, are very remarkable. In considering the peculiarities of the pulse, it is always necessary to

remark that there are two powers acting to produce it, viz., the heart and the arteries. That one part of the pulse belongs to the heart, another to the arteries, and a third is a compound of both. The stroke, which is the pulse, (as regards the number of strokes in a given time, the regularity or irregularity as to time, and the quickness of these strokes), belongs to the heart. The vibratory pulse and slowness of the systole, with the fullness and smallness of the pulse, belong to the arteries.

As the pulse arises from the actions of the solids on the machine, it is of course according to the nature of the machine at the time; therefore is capable of being in one of two states, natural or diseased.

In most diseases of the constitution, whether original or arising in consequence of diseases of parts in which the constitution becomes affected by sympathy, the pulse is altered from the natural to the diseased state which is according to those affections.

The varieties of which the pulse admits are numerous. It may be increased or diminished in the number of strokes; regular or irregular as to time; quick in its stroke, or diastole, and slow in its systole; or it may be hard in its diastole. In all cases probably, when the constitution is in a state of irritation, the pulse will be quick and frequent in its number of strokes in a given time, and the artery being hard, from the constant contraction of its muscular coats, will give a feeling of hardness to the touch; besides which the diastole of the artery is not uniformly and regularly the same, but there are a vast number of stops or intermissions, which are so quick as to give the feeling of vibration, or what we call thrill. In such a disposition the pulse may be either full or small. These two opposite effects do not seem to arise from the difference in the degree of strength and quantity of irritability that the patient possesses at the time, which, when joined, give an antidiastolic disposition to the arteries, so that when the arteries have a full power of contraction and are in a state of irritation at the same time this effect will always take place.

It is certain that arteries in such a state of constitution do not dilate so fully and freely as at other times; and as this varies quickly as the state of the constitution varies quickly, it is more reasonable to suppose that the effect is immediately from the arteries than from an increase or decrease in the quantity of blood. If this is really the case, we should naturally suppose that the motion of the blood in the arteries would be increased in proportion to their diminished size, unless we should also suppose that the systole of the heart should be diminished in the same proportion, which I think is probably the case, as we find the blood forsakes the surface of the body in such a state of constitution, which must therefore be collected in the larger veins about the heart. But if the heart were to throw out its whole contents at each systole, the velocity of the blood in the arteries would be immense, and must be then forced into the small vessels on the surface of the body, which it certainly is not. A quick hard vibratory pulse is generally attendant on inflammation. The fulness or emptiness of the pulse depend greatly on the parts that are affected, which either increase or decrease the irritability.

Different parts produce different states of the pulse.—In inflammation of common parts, as the skin, cellular membrane, muscles, &c., the pulse will be full and strong, and the symptoms acute, especially if near the heart. Ligaments, cartilages, tendons, and bony parts produce symptoms which are less acute; the pulse is not so full, but quicker, there being in these cases a greater degree of irritability. In the vital parts of the second order, as the brain, the pulse is soft and slow; but in the stomach, and parts with which it sympathizes greatly, as the testicles, upper part of the intestines, &c., the pulse is small, quick, and contracted.

Of the sensations arising from inflammations in different parts.—When the injury is in the head, the pain is often dull and attended with sickness; when in the heart and lungs, the pain is more violent. When in the stomach or upper part of the intestines, it is a heavy depressing pain, and attended with more or less of sickness. When in the colon it is more acute, but attended with less sickness. When the liver, ligaments, or bony parts are affected, the pain is much the same as when the stomach is affected, that is, heavy and depressing: the pain is acute and rousing when the skin, cellular membrane, or muscles are inflamed.

Inflammations in vital parts do not all produce the same effects on the constitution, which would seem to arise from their greater or less sympathy with the stomach; but it is certain that a given quantity of inflammation in a vital part, or its sympathizer, will produce much

more considerable effects than a greater quantity in another part, and the blood will be more sizy. When the heart is inflamed, its actions are irregular; if the lungs only are inflamed, the heart still seems to sympathize, and is irregular in its actions, as well as weak. If the stomach is inflamed, the patient feels a depression and a defective action in the heart as well as in every part; simple animal life, or living principle, seems then to be depressed, as the sensitive from inflammmation in the brain; and the pulse is low and weak. In inflammation of the uterus the pain is very acute, and the pulse quick and low, the stomach sick, &c. When inflammation occurs in these parts the symptoms come on very quickly; and if it proves fatal, it runs through its stages very fast, debility beginning very early. All this may depend on the stomach being, as it were, the central seat of sympathy, whence the actions of life are interfered with. However animal sympathy soon takes place here, and the sympathy being similar to the first action, a fever of a depressing kind is produced, and death soon succeeds.

Inflammations of parts not vital, of such violence as to affect the actions of life by the general sympathy, render the pulse full and strong. The constitution in this case is strong and not irritable; for when weak and irritable, the pulse is quick, hard, and small in the beginning, as it is in inflammations of vital parts, and the blood though sizy is loose in its texture.

Difference from different Nerves.—One cause of the difference in the inflammation of vital parts seems to be the different systems of nerves by which they are supplied. In all those parts supplied by the par vagum, inflammation affects the patient with lowness from the first, these nerves supplying the parts of involuntary motion, and therefore possessing the living principle in the highest degree; whence an inflammation of these parts becomes peculiarly depressing.

Situation of the blood in the commencement of diseases.—In some diseases the blood at first forsakes the skin, extremities, and lips, and the parts shrink and diminish in bulk; this is particularly evident in the eye, and arises from want of power in the constitution, all the powers being called to the citadel, or source of power, and the outworks left. This happens in fainting, agues, hectic, &c., and does not seem to arise from debility at first, but from a novelty of action, and a consequent inability to perform it. In putrid fevers the external parts first lose their living power, from having a less resisting power.

Of the effects on the constitution from different stages of inflammation.—The constitutional effects arising from inflammation, independent of the difference of parts, situation, nerves, &c., are more or less according to the stage of the disease. When inflammation is in the adhesive stage, it has but little effect on the whole system, and that effect is generally an increase of animal actions. This stage is the one which should be considered as truly inflammatory, as in it the constitution appears to be more regular, more determined, and more at ease, for it is more steady, more capable of continuing the time of action than in any other, hardly any varieties taking place in the time of this stage of the disease. When the suppurative stage comes on, the effects on the constitution are much more considerable and more various. Cold fits or rigors are generally felt on the commencement of suppuration; but they are not lasting, and are often succeeded by hot fits, both being more or less according to the greatness of the present inflammation and the suppuration that is likely to follow, as indeed with the nature of the parts and their situation, whether vital or not, &c.

Cold fits show plainly the commencement of some new action, as the beginning of fever, the absorption of poison, or even from simple irritation, as pricking the finger with a clean needle. They may also be produced by disagreeable sensations and disagreeable states of the mind. These rigors are probably dependent on the stomach, which being the seat of simple animal life and the seat of sympathy, takes part in every constitutional alteration, and we observe how much this viscus is affected by loss of blood, disagreeable sights, &c. What nature intends to effect by this sympathy with the rest of the body is hard to say, but it is worthy inquiry whether she may not intend to relieve herself by rousing the actions of life by means of vomiting. Rigors seems to be the effect of any new action in the constitution, and not at the commencement of a disease only, for even at the close, changing from a diseased action to a healthy one will cause rigors to take place. In a strong constitution, where rigors occur in consequence of a well-formed fever, the consequent actions of a hot fit and sweating go on regularly;

but in a weak constitution there is much loss of power by each rigor, and they will not be followed by a hot fit, but only perhaps by a little sweating.

A boy was attacked with rigor, followed by sweating, and he afterwards continued getting sensibly worse and worse: pulse quick and full, blood sizy, tongue white. He was worse every other day. After being ill a fortnight, he was again attacked with rigor, hot fit, and sweating, which, contrary to my expectation, who supposed these would be repeated, carried off the disease with that single fit. I think I have seen other cases where Nature has attempted something like this, but has failed.

In many cases the rigor is the first apparent symptom, and is followed by a hot fit, and then sweating, and when these whole actions of the disease have taken place the patient becomes well; but this is not the case where, from weakness, &c., the whole regular actions do not take place, but, as at the commencement of the boy's case above related, the hot fit does not succeed the rigor, and he continued ill afterwards until Nature again took on the rigor, and he was able to go through the stages regularly, and one fit carried off the disease. The boy above mentioned was also a striking instance of the crisis of a disease being like its commencement.

Rigors from a local affection are seldom followed by a hot and sweating stage, and the bark in such cases can be of little service.

The ulcerative stage seldom affects the whole system; but that rigors take place on the commencement of ulceration is, I think, certain, although it cannot be well perceived in all cases, for ulceration will follow so close on suppuration in most cases that it will be difficult to distinguish which was the cause of the rigors. But when suppuration has taken place, and the abscess been opened, (so that the act of suppuration is finished), yet not so opened as to afford a ready outlet to the matter, the pressure of the matter against the most depending part of the abscess will cause ulceration, and thereby rigors will take place; but these rigors will not take place for some time after the first opening, for the first opening will for a time remove the disposition for ulceration all over the surface of the abcess; but when it finds this opening not sufficient to take off the pressure, it then sets to work to make another, and the rigors return. Many have supposed from these rigors that new matter was forming.

Exacerbations are other symptoms, which have a great affinity to the foregoing, and are common to most constitutional diseases, and to some local ones. They are repetitions of the first attack, but seldom so strong as the first. These have been supposed to be owing to the disease acting on the constitution at stated times; but we must search for some principle in the animal œconomy to account for this, for we cannot suppose an increase and decrease in the cause of disease to account for it. Agues exist in the constitution as much between the fits as in them. If the constitution is strong, the exacerbations are regular; if weak, irregular. These may be partly owing to the fact that an animal cannot exist long together in the same state; life cannot always be affected in the same way.

ON WOUNDS OF THE HEART.

By Mr. Lees.

Mr. Lees has collected from various quarters, and narrated from his own observation, many cases, illustrative of the effects of wounds of the heart. In this country, at this time, such wounds must chiefly interest us in their medico-legal relations. We shall content ourselves with a summary of the more striking facts.

1. Wounds of the heart are popularly considered to be instant death. They are not always instantaneously fatal, but in too many instances they are so. Take a case as a sample.

Case. Dr. Corrigan shewed Mr. Lees a preparation in his possession, of a wound of the right ventricle which was followed by instant death: the case was that of a bailiff who was stabbed in the belly with a long knife, by a person standing upon the stairs under him; the knife penetrated the diaphragm just below the seventh rib, entered the abdomen, and re-entered the diaphragm, and perforated the right ventricle of the heart near the base.

2 The most interesting facts are those which establish the possibility of the individual's living for a short or a long time after the infliction of the wound. Mr. Lees cites some instances of this description.

Case 1. Ambrose Parè states he wit-

nessed a case where a person, after being wounded by a sword thrust in the chest, pursued his adversary for two hundred paces, and then fell dead; on examination he found a wound in the heart large enough to receive his finger, and a large quantity of blood effused on the diaphragm.

Case 2. Hennen, in his Principles of military surgery, quotes a highly interesting case of a soldier, who received a sword wound in the chest, and was left on an open staircase for five days, during winter time; he lived ten days after being brought to hospital, and died of gangrene of the legs, caused by the extreme cold to which he had been exposed; on dissection it was found that the right lung had been wounded, the right ventricle of the heart laid open, but this wound was perfectly cicatrized.

Cases 3, 4, 5. Dupuytren was decidedly of opinion, that these wounds were necessarily fatal; and in his Leçons Orales he alludes particularly to the case of a soldier, in whom, six years after the healing of a wound of the chest, a musket ball was found impacted in the substance of the right ventricle of the heart near its apex.

He also gives the case of a man, thirty-four years of age, who was brought to the Hôtel Dieu, May 5th, 1831, having received two stabs of a knife, one in the præcordial, the other in the epigastric region; there was no evidence that the wound had penetrated, as the heart's action and respiration were regular, the patient complained but slightly, and auscultation and percussion discovered no morbid phenomena. He had, however, a general spasmodic trembling. He died on the 13th with symptoms of diseased brain, having been affected with tetanic spasms for two or three days previous to his death; there was a wound of the pericardium of three lines, which also penetrated the cavity of the left ventricle, the pericardium contained ʒi. of serosity, and Dupuytren thought he might have survived if the head-affection had not supervened.

He also gives another case of a man who died mad, after attempting suicide by amputating the penis, and in whom six penetrating wounds of the right ventricle were found after death, although during life there were no symptoms indicative of such a lesion.

Case 6. In the Museum of Martinique is preserved a heart, with the end of a sword five inches in length impacted in it. The case was that of an officer, who in a duel received a sword wound in the right side of the chest, the point of the weapon broke, and the seconds supposing it to have been lost in the grass, walked with him to the hospital, where he expressed so little uneasiness, that the surgeon, supposing it to be a mere flesh wound, allowed him to return on board his ship, where he continued without any suffering the whole of that day, but at night very severe symptoms supervened, and he died next day; on examination, it was found that the point of the sword had passed through the right auricle, and wounded the left lung.

The preceding case is cited in illustration of Harvey's proposition on the insensibility of the heart—a proposition supported by his celebrated case of the young nobleman. Mr. Lees quotes also the experiments of Mr. Carlisle, Domonstrator of Anatomy at Trinity College.

"He mentioned to me that in his experiments on the motions and sounds of this viscus, he found that punctures of its substance affected its motions but slightly, and even on inserting tubes through its parieties into the cavities, though at first there was some slight palpitation, yet it soon accommodated itself to their presence; but he found that if he compressed the nerves going to its substance, by passing a ligature round the aorta and pulmonary artery, much suffering was evinced."

3. Mr. Lees divides wounds of the heart into punctured and contused.

The former he subdivides into simple acupuncturation—and punctures complicated either with a copious hæmorrhage, or with residence of a foreign body in the wound.

A. Of the first of these complications, the late Duc de Berri (who was assassinated at Paris in the year 1820) afforded a remarkable example. He was stabbed in the right side, the right ventricle was pierced through, and the hæmorrhage into the cavity of the pleura was so considerable, as to oblige Dupuytren to open the wound every two hours while life lasted, in order to prevent impending suffocation; he lived in this state for seven hours.

B. "The second complication may be caused, either by a fractured portion of a rib, or by a part of the weapon remaining in the wound. In the museum at Park-street, Mr. Thomas Hart had the kindness to show me a preparation of a wound of the right auricle; and Mr. Wilkin, who was clinical resident in Stevens' Hospital at

he time it occurred, has given me the particulars of the case. It was that of a brewer's man, who had fallen under a dray, when it was heavily laden, which passed over his chest; he was lifted up, and complained of pain and weakness, but was able to continue sitting on the side of the dray driving the horse for nearly an hour, when being in the vicinity of the hospital, he thought he might as well get himself examined: he walked in, and lay on a bed, but on turning on his side he suddenly expired. On dissection, it was found that the fifth rib was fractured, and that the extremity of one portion had penetrated the pericardium, but had freed itself from the heart; and this, as Mr. Wilkin observes, accounts for the sudden death of the man. For it is probable, that the portion of rib had filled up the wound of the heart, and thus prevented any hæmorrhage until his arrival at the hospital; when, on its coming out, the sudden effusion of blood into the pericardium caused sudden death; there had no blood escaped outside of the pericardium."

"As to those cases, in which part of the weapon remain in the wound, Orfila quotes an interesting observation in his Medicine Legale, of a workman who, in a melancholic mood, stabbed himself with a sharp stilet, between the fifth and sixth ribs of the left side, on the 24th of May. He was brought to the hospital on the 26th, in a state of great collapse, the pulse small, intermitting, respiration hurried, great anxiety, and severe pain felt; on touching the wound, which was nearly cicatrized, but just below it, a peculiar thrill could be heard, or as it is expressively denominated, a *crepitation ondu-leure*, similar to what can be heard in a varicose aneurism: the horizontal position caused great pain. On the 3d of June he had severe rigors, followed by erysipelas of the face, and he died on the 13th, that is, twenty days after the receipt of the wound; on examination of the body, the pericardium was fouud to contain ten ounces of fetid bloody serum; in the inferior third of the right ventricle was impacted an iron stilet, which, penetrating the septum, could be felt in the left ventricle."

c. The heart occasionally suffers from contusions of the thorax. In the last siege of Antwerp, by the French, some remarkable cases occurred in which this organ was severely contused, and ruptured without any external appearances of injury, either to the integuments or ribs, in which the death, in some cases instantaneous, was supposed to have been caused by the wind of the bullet. In some of the cases mentioned, a violent acute pneumonia supervened, in others, death followed from an effusion of blood into the cavity of the pleura.

In some instances, though no obvious lesion of the cardiac structure was produced, the heart has suffered so violent a commotion as to cause the suspension of its contractions, and a state of syncope which has occasionally proved fatal. The following case was not mortal, but is curious.

"A case of this description occurred while I was at Paris, and as I knew the parties concerned, and saw the patient shortly after his wound, I can vouch for its accuracy. Two French students quarrelled at supper, they wished to settle their dispute on the spot, however as they were both very tipsy and infuriated we prevented them; the next morning they met, and as they were determined that one should die, their friends prevailed on them only to load one of the pistols, and then leaving both on the table, to draw lots as to who should take the first chance of the pistols, of course being ignorant which was the loaded one; it was loaded with four pellets. They then mutually felt for the point of the chest, against which at that moment each stroke of the heart told with increased violence, and pressing firmly against this part, they fired: one of them fell to the ground in a state of insensibility, but on examining him they found merely a slight flesh wound at the part to which the pistol had been applied, and with a little care he soon came to himself. I saw him about three hours after this had occurred. He was then in a state of great anxiety which he could not account for, as he expressed more unpleasant sensation of weight about his heart than actual pain; there was great tendency to fainting, the pulse intermitted, with severe palpitation of the heart: under proper treatment all these symptoms subsided, and he recovered perfectly in a short time. I consider myself peculiarly fortunate in having witnessed this case, for in affairs of this kind it is generally the right side which is wounded, owing to the position we naturally assume; and also, it exemplifies in a striking manner the power of compressed air resisting the expansive force of gases."

We may not be astute, but we do not exactly see our way through the pre-

ceding case. However, Mr. Lees so possitively vouches for its accuracy, that scepticism must necessarily be silenced.

4. The following generalizations are not unimportant, nor are the remarks appended to them unworthy of attention.

"All parts of the heart are not equally liable to be wounded, for in a series of fifty-four cases collected by M. Olivier, the right ventricle was the seat of the wound in twenty-nine, the left ventricle in twelve, both ventricles in nine, the right auricle in three, the left in one. The same author states, that out of twenty-nine cases of penetrating wounds of the cavities of the heart, only two proved fatal within forty-eight hours; in the others death took place at the varying periods of from four to twenty-eight days after the receipt of the wound.

These differences in the time at which death has occurred in individuals whose wounds have presented nearly the same appearances, as also why they are not immediately fatal, have been attributed to the peculiar disposition of the muscular fibres of this organ; for as the heart is constituted of layers of superposed fibres having different directions, if the instrument has divided a great number of its fibres in a transverse direction, the retraction will be considerable, and the probability of hæmorrhage much greater than if the wound run parallel to these fibres; thus, suppose the left ventricle to be wounded, there are three layers of fibres in its substance, the superficial and middle layer take one course, the deep layer takes an opposite direction, so that while one set of fibres are divided transversely, the others are merely separated longitudinally, and thus favour the formation of a coagulum, causing an obstruction to further effusion; at the first merely temporary, but finally definitively; so that we may assume, that wounds which are parallel to the axis of the heart, are *cæteris paribus*, less rapidly fatal than those which are transverse; and it is this action of the fibres which renders wounds of the ventricles less rapidly fatal than those of the auricles."

There are some other observations to which we do not deem it necessary to advert, as our object has been to arrange and present the facts collected by the industry of Mr. Lees.—*Medico Chirurgical Reaiew, from Dublin Joürnal. See also the Physicians Vade Meeum, by Dr. Ryan*, 1837.

REVIEWS.

A Clinical Treatise on the Endemic Fevers of the West Indies intended as a Guide for the Young Practitioner in those Countries. By J. Evans, Esq., M.R.C.S. London: J. Churchill, 8vo., pp. 309. 1837.

The endemic diseases of the West Indies are thus described by Mr. Evans, whose ample observations entitles his account to due consideration.

"If we examine the endemics which have arisen from malaria, as they have been described by authors, three classes of symptoms will not fail to strike us. The first is immediate, and often follows the impression of the poison instantaneously; vertigo, headache, fainting, convulsions, coma, or even death itself, belong to it, and point out to us the powerful action which has been produced upon the nervous system. The second sometimes quickly succeeds the first: often, on the contrary, a period of some days intervenes between them. It consists of a series of symptoms, characteristic of abdominal inflammation, such as pain and heat in the region of the stomach, vomiting with more or less effort, thirst, anxiety, agitation, supination, the tongue dry and red at the edges and tip. Other organs soon sympathize, become irritated, and at last inflame; none so frequently as the brain and its appendages, and we have then headache, coma, and delirium superadded. The symptoms of the third class depend upon a disordered hœmatosis, and consist of passive hæmorrhages, petechiæ, ecchymoses, extravasations of blood into the cellular tissue, &c.

"How does malaria introduce itself into the system? is a question which often asked; and by some it has been doubted whether it enters into the system at all. The emanations from the marshes are held in solution by the watery vapour existing in the atmosphere, and therefore come into contact with all those substances which are surrounded by this fluid; consequently with those surfaces of the human body which are in report with the external world, the skin, and the mucus membranes of the aëriform and aliamentary passages. With every inspiration a certain quantity of this poison is inhaled and impinges itself upon the capillary and nervous extremities of the lining membrane of the bronchi and air-cells: when this is great,

or when it is concentrated, the nervous extremities become irritated, and this irritation is conveyed to the brain; hence the symptoms belonging to the first class described above. Its mode of action approaches nearly that of the mephitic gases, or of prussic acid, and is equally as incomprehensible. By the venous capillaries or radicles it is absorbed: at least everything would lead us to suppose so, and is carried into the system.

"Has malaria any other local effect besides that produced upon the nerves of the part? No, certainly not; neither pneumonia, gastritis, nor inflammation of the skin, is ever produced by the direct contact of this agent, unless it be at the same time combined with some other, which of itself is a powerful irritant. The men who worked in the swamp in the neighbourhood of Castries suffered from inflammation of the lower extremities; but the nature of the substance amongst which they were treading, and to which these parts were exposed, was sufficient to produce this effect.

"The effects produced by the introduction of malaria into the economy are generally imperceptible at the time, and a certain interval, more or less considerable, elapses before they take place in a manner appreciable to us. A number of men are exposed to the emanations arising from swamp; some are instantly attacked with delirium, stupor, or convulsions; others remain apparently well for a day or two; a third party for a week or fortnight, and a fourth are not affected at all. Now and then the effects have not been perceived for months after leaving the infected source, and then break out suddenly. This was freqently observed after the campaign of Walcheren; and it was of daily occurrence to see men, who leave St. Lucia apparently in perfect health, attacked with intermittents after having been three weeks or a month at sea.

"Another peculiarity in the physiological history of this poison, is the faculty which it seems to possess of gradually accumulating in the body; and when the system is charged with it, suddenly exploding. A series of symptoms are thus produced, exactly resembling those arising from its introduction in a more rapid and energetic way.

"At other times it does not explode in this sudden manner, but, on the contrary, produces a series of nervous phenomena, and ultimately an intermittent."

It appears, from this account, that the effects of malaria are very similar to those produced in various other countries, though somewhat modified, and closely resemble the symptoms of typhus and putrid fevers in all nations. There are, however, some shades of difference. The effects of malaria on some inferior animals also deserve attention.

"Marsh seems, in general, to produce no injurious effects on the greater number of animals placed below man in the zoological scale. The tiger finds a safe shade in the jungles of Bengal, and the lion watches his prey in the mangrove fens of the African river, unscathed by their poisonous emanations. The cow, the buffalo, and the hog, luxuriate in the rich pastures of the Pontine Marshes; they thrive and grow fat, whilst man, all-powerful man, whom interest or necessity has induced to become their attendant, if he escape their first effects, gradually wastes away from protracted intermittents, or trails along his wretched body, swollen from dropsy, or emaciated from visceral disease. In St. Lucia, the only animals, except man, which appear to be affected by malaria, are dogs. These poor creatures are imported from England in considerable numbers, and are always in demand, as few survive the first year of their transportation, either being carried off by accidents, as the bite of the serpent, (the *trigonocephale* of Cuvier,) convulsions produced by insolation, or (by far the greater number) dying from fever of different types, presenting similar symptoms and pathological appearances as are found in man. When ill, the creature is seen stretching himself out in the sunshine, or under a cool shade, where the air blows freely; his eyes are dull and heavy, his tongue protruded from the mouth, and white; his respiration is quick, and his sleep apparently disturbed by dreams. When his thirst induces him to rise and seek for water, he often tremhles in his gait, and seems to reel either from giddiness or weakness. At length, life is terminated generally by a convulsion.

"These symptoms may be intermittent, or they may be continued. That they arise from malaria I think is certain, because they are not seen in the other islands, where this poison is less abundant; and secondly, because they can be produced at will, in recently arrived dogs, by confining them within the range of the action of the swamp. In all the dogs I have examined, which have died with these symptoms, I have found with only

one exception, the cause of death is an inflammation of some part of the gastro-intestinal mucous membrane. There was also a perceptible change in the blood, which, though it coagulated to a certain degree when taken from the vessels, and poured into a basin, after death, the coagulation was soft, and the serum contained a quantity of the colouring matter. This was the extreme extent of alteration in its appearance; in one or two it scarcely differed from that found in death from other causes, and seemed, in part at least, to have coagulated in the vessels; yet it did differ. The brain was examined in two cases only, and presented no lesion whatever. In the case which forms the exception, the dog died from an inflammation and purulent infiltration of one lung; the lower part of the ileum was in a state of considerable hyperemia.

"I never saw, as far as I can recollect, ague, or perceptible cold stage, except once, and then it was extremely well marked. The animal shook convulsively, and sought the sunshine, from which it was impossible to drive him. The symptoms continued about an hour, and then gradually subsided; but though he seemed better, he still continued unwell; the paroxysm returned daily, the poor wretch became worn to a skeleton, and at length disappeared."

Mr. Evans next introduces a section on "The Effects produced in Animals by the introduction of Putrid Matter into the economy," in which he details the experiments of Magendie, Leuret, Hamont, Nysten. and Dupuytren, with which our experienced readers are well acquainted. We may, however, remind them, that intermittent diseases have never been produced by the introduction of putrid substances into the circulation; but the experiments have neither been sufficiently numerous nor decisive. Our author sums up his conclusions in the following words:—

"With respect to the other supposed sources of malaria, little need be said. We have already seen that the gases which escape from soil of volcanic formation, under no circumstances can be considered as constituting this poison; and that places, the atmosphere of which contains one or more of the the most mephitic amongst them, in a considerable proportion are free from the diseases of which we propose to treat: thus, in St. Lucia, Castries is extremely unhealthy, whilst the town of Souffriere, situated in the immediate neighbourhood of a prolific source of these emanations, is the most salubrious quarter of the island.

"Another opinion, that malaria originates from the decomposition of certain plants, as the chara vulgaris or flexibilis, the manchineal or the mangrove, is correct so far as these substances form part of the vegetable kingdom, and therefore capable of giving rise to it no further; true, some of these furnish emanations much more deleterious than others, but they enjoy no exclusive privilege in its production.

"The opinion of Dr. Fergusson that water, during its progress of exsiccation, is the only cause which gives rise to this poison, is an ingenious hypothesis, but has no substantial foundation, and is contradicted by every day's experience.

"To conclude, nothing is known of the chemical properties of malaria. Whatever may be its nature, it has its origin in the decomposition of organic matter; whether it has any other, remains to be proved. It differs little, or not at all, from the peculiar poison which resides in all putrid substances, whether animal or vegetable, as the physiological effects of both seem to be the same, allowance being made for those which may be caused by different matters with which each may be united, and the different ways by which they may be introduced into the economy.

"Putrid substances have an action upon the part to which they are applied, and inflammation of this part is the consequence. To the local affection is added a series of phenomena which terminate in death, and the whole circulating mass is found diseased: the former depends upon the local effects of an irritating substance, the latter upon the absorption into the system of a peculiar matter, which seems to possess a specific action upon the blood.

"When putrid substances divested by filtration of a great portion of the solid matter with which they were before united, are injected into the circulation, convulsions, gastro-enteritis, and fluidity of the blood, are the result.

"We hear of fevers of different types reigning epidemically or endemically, in countries where marsh is unknown, and where the quantity of animal or vegetable matter is so small as to preclude our attributing them to this cause. Do these diseases differ from those of acknowledged marsh origin? Have they their rise in malaria? If so, whence emanates this substance? These questions are not to be answered here. I can only examine

the known causes of the diseases of St. Lucia and the neighbouring islands, and refer those who are curious in this subject to other sources of information.

"When the emanations from the decomposed animal substances are *confined*, and do not escape freely into the atmosphere, new arrangements take place, and certain gases are formed, with which, if man or an animal comes into report, asphyxia, or even poisoning ensues, from the action of these substances upon the nervous system, through the nervous extremities of the lungs; and whether these symptoms will be followed by those peculiar to the introduction of putrid matter into the system, will depend upon the existence or non-existence of *this poison* in the emanations, or rather the proportion in which it enters into combination with them.

"Emanations from marsh or swamp generally consist of malaria, held in solution in the atmosphere, and, when collected in form of dew, do not contain any of these gases, or if they do, it is in so small a quantity as to escape all our researches, and therefore to be incapable of producing any effect These emanations have a specific action *on the nervous system*, causing ague, neuralgic affections, convulsions, coma, and sometimes, but rarely, death; *on the blood*, by destroying the powers of coagulation which the fibrine possesses in health; *on the gastro-enteric* mucous membrane, producing inflammation of this tissue. M. Caillot says, in his work, 'Sur la Fièvre Jaune,' that every physician who has treated bilious fevers in their most intense form, within the tropics, must be struck with the similarity which exists between the effects produced by certain mineral poisons and those arising from malaria. This remark is very true, and to which every one, acquainted with these diseases and with the researches of Sir B. Brodie and Dr. Orfila, cannot fail to subscribe."

Several cases are given in illustration of the diseases of the West Indies, some of which we shall quote:—

"*Cases of Intermittent Inflammations.*

"*Intermittent Pleuropneumonia.*—Lucille, a girl of colour, aged twenty-three, has been unwell for two or three days with what she calls a cold, but has not been confined to the house until yesterday, when she was suddenly attacked with a severe pain in her side, cough, and fever, about nine o'clock in the morning. The symptoms ceased toward evening, and she remained tolerably well until this morning, August 21, 1833, when they again returned. At noon I found her as follows:—Pain over the sixth and seventh ribs on the right side, increased on inspiration; dry cough, crepitating *rale* over the seat of the pain; no uneasiness of the epigastrium; bowels regular; skin dry and warm; tongue natural. She had no cold stage, nor was the attack preceded by a sense of coldness. *Diet—demulcent drink; castor oil.* Evening—the patient is perspiring; expectoration on coughing; the pain has subsided; the *rale* is mucous. 22nd.—The patient has had a return of the paroxysm; the pain in the side is greater than yesterday; several fits of coughing, with expectoration of small quantities of very viscid mucus; *rale crepitant;* pulse ninety-six. Evening—perspiration, and mitigation of symptoms; expectoration free; the sputa white and frothy; there is still some pain on inspiration; the pulse is eighty-four; bowels open. 23rd.—The paroxysm commenced two hours before its usual period; I saw the patient at noon; she is much worse than she has yet been; the sound, on percussion, over the seat of the disease is somewhat dull; breathing very painful. Evening—The disease is advancing; there is no appearance of intermission; sound on percussion dull; centre of the diseased part does not appear permeable to air: at least the crepitating *rale* in its neighbourhood hides the sound, if any exists; sputa viscid, adherent, and of a rusty colour. V. S. ℥ xvi.; hirudines xx. lateri; decoction of marsh-mallow, in which antim. tart. gr. vi. are dissolved for drink. 24th.—The patient is better: to continue. Evening—Amelioration very great; great prostration from the effects of the antimony, of which the patient has taken nearly eighteen grains. 25th.—Expectoration free; *rale* mucous; pain nearly gone; pulse seventy, small. To take the medicine only now and then. 26th.—Convalescent.

"The carpenter of the ship, Cuba, up to this period in the enjoyment of good health, married, and father of three children, has been unwell for the last week or ten days, with pains in different parts of the body, but is laid up to-day for the first time. He says that he has a good day and a bad day. The pains first commenced in the loins, then attacked the shoulders, and are now in the left knee and ankle; the knee is somewhat swollen and warm; the patient complains of excruciating pain on moving it; the ankle

is not swollen, but is warmer than natural; the pulse is ninety, and full; the tongue clean, and the bowels open from medicines which have been given him. Warm fomentations to the knee, and to take twenty drops of the vin. colchici thrice a day. The following morniug—the patient is walking about; the pains are gone, and nothing but stiffness remains. On the third and fifth days from the period of my first seeing him, the pains of the knee returned, accompanied by a pain and swelling of one wrist; the paroxysms continued about fourteen hours. The patient was completely cured by a few doses of quinine."

First Principtes of Medicine. By Archibald Billing, M.D. A.M., &c. &c. Second Edition. 8vo. pp. 130. London: Highley. 1837.

We were the first to offer our approbation of the work before us, and we are happy to see a new edition of it. The want of a work of this kind led the author to prepare an epitome of the principles of medicine, which he was induced to draw up for his own use, and, finally, to place before the public. He informs us in his preface that—

"The so-called systems of Cullen, Brown, Broussais, Rasori, &c., seemed mere individual opinions totally differing from each other; and which was I to follow? each, confident in himself, despising his adversary, their followers almost coming to blows in arguing, as much for victory as the love of truth. I visited the different schools; and, though the students of each hinted, if they did not assert, that the other sects killed their patients, I found that, provided the physician of each was a man of talent and experience, the mortality was fairly balanced. I thought that there must exist some true general principles by which the apparent inconsistencies of correct practice might be reconciled, and by which the contest between such systems as were essentially at variance might be decided. But, though there were to be found innumerable volumes of cases, and interminable heaps of insulated precedents, there was no treatise upon first principles. After twenty years of intense application to clinical practice, as student, assistant, and professor, I ventured to publish what I had drawn up, condensed to 130 pages. The trouble which it cost me in condensation makes me pleased whenever the term "little" is applied to it, and I cannot deny myself the satisfaction of transcribing the words of Professor Stromeyer, of Hanover. "Dr. Billing's book is a very clever little Pathologia generalis; his views certainly go beyond those of most pathologists, by his taking the nervous system into consideration. Upon the whole, I think it as much written for fully educated medical men as for students. Books like this are very rare; almost every writer strives, whatever little original ideas he has, to bury them in a mountain of generally known matter, whilst Dr. B. gives us a very intellectual (geistrich) view of his peculiarities." I must acknowledge also that I derived much satisfaction from the favourable notices of the Medical Reviewers, especially of the Med. Chir. Review, the London Med. and Surg. Journal, and the London Med. and Phys. Journal, 1831, as their testimony gave me more confidence in the approbation expressed by private friends."

Though this is no more than an outline of the principles of medicine, yet it contains much important information. Dr. Billing claims the merit of having first given Clinical Lectures in London, and set an example which is now generally followed.

"The subject of clinical lectures is connected closely with the attempt to reduce the science to general principles; much just censure has been expressed, in medical publications, of the neglect of clinical instruction, and of the omission on the part of Hospital Physicians and Surgeons, to render their experience available to the profession in general, and consequently to the public. In 1822 there were no clinical lectures given in London. In that year I had the honour to be elected Physician of the London Hospital; in the same year I commenced giving clinical lectures, and not merely instructed the pupils in the wards and theatre, but attended and explained post mortem examinations. This course I pursued, at a great sacrifice of time, and some of health, for six or seven years, when the rising generation of my clinical secretaries, Dr. Macbraire and W. J. Little (now Professor of Comparative Anatomy, alumnus dignissimus of Muller and Grant), Messrs. Hamilton, Adams, Curling, &c., being able to relieve me, I continued only the lectures, instructions in the wards, and once a week on anatomical demonstration, illustrating cases by recently obtained specimens, or from the extensive collection of pathological ana-

tomy in the Museum. In this mode I persevered up to the present session, when, from being appointed to the University of London, it would be impossible for me to continue it. I have since then had the satisfaction of finding that the example has been very generally followed in this metropolis, besides that of witnessing the success of the school in which it was first regularly begun. The London Hospital was amongst the first that were mainly instrumental in *introducing* auscultation; but it is not yet by any means generally *adopted* It is a source of real regret to me to find, how few medical men have taken the trouble, or known how, to avail themselves of this invaluable and indispensable method, of detecting, so as to combat, the most deadly diseases of the chest. On this score Dr. T. Davies has gained a well-earned celebrity. He not merely gave lecrures to pupils, but collected the men in practice at the east end of the town, at his house, and instructed them in this almost new sense of perception; and from the time he became one of the medicel officers of the London Hospital, in 1822, I enjoyed immense assistance from him in the clinical department, in the instruction of those young gentlemen, who have had the good sense to avail themselves of the opportunities afforded them of learning auscultation and the use of the stethoscope. One cannot be much surprised, that the multitude are slow in adopting what, in some instances, has been treated with neglect, and in others has met with decided opposition by men in high reputation and practice. As to the stethoscope, I wish it were understood that it is not absolutely necessary, except from motives of delicacy, as the apparent difficulty of using it deters some persons from commencing auscultation, and as given, occasionally, an opportunity for opponents to use a tremendous substitute for reasoning—ridicule. It is disagreeable to apply the ear to the chest, if the patient, as occurs sometimes in charitable institutinos, be not clean; and, if the patient be a female, it is objectionable for other reasons: hence, the artificial elongation of the meatus auditorius externus, called stethoscope, becomes sometimes eligible, though no better than the naked ear to judge by. I am in the habit of using a very simple one, which is merely Laennec's, abidged, instead of being complicated, as it has been by other *improvers* of his instrument; it is rounded and cut away in the middle, to make it light and convenient; the flat end being turned to the chest answers the purpose of the obturator; it is only four inches long, which is sufficient for the purpose, as to stethoscoper and and stethoscoped, and may be obtained from any wood-turner for a few pence

"One great difficulty in the way of learners of auscultation is their attempting to begin on patients; this is like trying to study morbid anatomy before a quiring a knowledge of healthy structure. If beginners would first learn the sounds of respiration, and of the heart, in healthy persons, which may be done in about ten minutes once for all, they would have little difficulty in detecting any unhealthy deviation from the normal state, and would very soon arrive at just diagnosis. But I warn them that they must soon do it, or be disgraced. Many affectionate parents are in the habit of feeling the pulse, and looking at the tongue when they suspect disease to exist; they will soon also begin the very simple process of applying their ear to the chest, and thus put the medical attendant to shame, if he cannot make use of his."

We cannot assent to the opinion that the sounds of healthful respiration can be learned in ten minutes, or that the normal sounds are detected so very speedily as our author supposes; neither do we think that that the reasons urged in favour of the employment of auscultation, are the best that could be adduced. He next alludes to the progress of science in these words:—

"But the progress of the schools has been slow enough: it is only now that comparative anatomy, which is the only sure foundation of physiology, is *beginning* to be taught in London; and it required the energy and talents of a Grant, with a firm footing in a great school, to carry it into effect, and to compel the other schools to follow the example. Professor Macartney, with all his energy and talents (and he does not require my testimony to establish his claim to both), fully imbued with its value, could not find support in his laudable attempt to establish it thirty years ago in Bartholomew's Hospital; but I consider myself most fortunate in having early met with him, and imbibed a taste for physiology. The ingenious and persevering German comparative anatomists, with their microscopes, are unravelling many a dignus vindice nodus; and I am gratified to find in their recent publications, confirmations of opinions advanced in this work seven years since; as, for instance, my expla-

nation of the cause of a limb being 'asleep,' benumbed, by reference to the medullary part of the nerves being in tubes (as asserted by Fontana), has been demonstrated by Ehrenberg (Darstellung eines merkwürdigen Baues des Seelenorganes, Berlin, &c.), who has proved also, that not only are there two sets of nerves, of animal and organic life, but that there is a third set, of the senses, all recognizable by their structure, when an isolated piece of either is subjected to the microscope; and Remak (Archiv sur Anatomie Physiologie, &c. von Dr. Johannes Müller Jahrgang, 1836, Heft 1 & 2) has shewn the difference between the motor and sensitive roots of the symmetrical nerves, that the latter possess, in addition, some organic filaments, and that the glosso-pharyngeal belongs to the same order as the optic, auditory, and olfactory; thereby confirming Pannizzi's opinion, that the hypoglossal is the motor, the lingual branch of the fifth sensitive, and the glosso-pharyngeal the gustatory nerve of the tongue. Schwann (Müllers Handbuch der Physiologie, Goblentz, 1833), by experiment on the mesenteric arteries of small living animals, has demonstrated that I was right, as to the modus operandi of cold as a remedial agent in inflammation. Schwann and Eulenberg again have shewn, that the middle coat of the arteries is not muscular in structure, but elastic, as asserted by me, consisting of that distinct tissue constituting the ligamentum nuchæ of ruminantia, the ligamentum flavum of man, &c. The veterinarians also have contributed in their comparative department. Hausmann has added fresh proofs, by direct experiment, to my theory of inflammation. Sewell, of our own Veterinary College, twenty years ago, published plates shewing the muscular coat in the bronchi of the horse; indeed, the muscularity of the bronchi was shewn by Morgagni. Nevertheless, it has been lately spoken of as a discovery, as mentioned in Youat's valuable Journal, March 1837, in the Report of the Veterinary School of Alfort. Not that I agree that the muscularity of the bronchi can assist in natural expiration, for that is contrary to the physical structure of the chest; it merely serves to expel any noxious matter, whether generated there or introduced through the windpipe.

"But there is no end to reclamations. I learn from the Medical Gazette, that I have to apologise to Dr. Marshall Hall, for not having mentioned him as having preceded Gooch in the description of the affection alluded to, which was the fact; at the moment I was merely thinking of an authority, and Gooch's being great as a practical man, and his book in the hands of all practitioners, I mentioned him. In Dr. Marshall Hall's paper in the Transactions of the Royal Society, 1833, "on the reflex functions of the medulla oblongata and spinal chord," there is one original discovery of great importance—the establishing that various nerves influence each other so as to produce reaction, in consequence of the uniting medium of the spinal cord, independent of the brain: this independence of the brain, and the proving it physiologically, is the originality. As to pathological subjects, the *rationale* of which he says was not previously given, and that they were '*untouched*,' it will be found that they were freely *handled* by me, in this publication two years before, and more than ten years before that in my lectures on the Institutes of Medicine; the very term *reflection* was applied to the phenomena by Pfaff as far back as 1801, (Grundriss, &c. Copenhagen, 1801). To shew this, I have changed but one word in my text, putting the modern term, nervous centre, instead of brain, which reconciles the passage to Dr. Hall's discovery, leaving the *rationale* as I originally gave it.

"At page 104, I gave the rationale of the involuntary re-action (equivalent to reflection), which takes place in Hysteria Epilepsy, Tetanus, &c., producing spasms of the voluntary muscles, and of convulsions from worms in the intestines; but in which, I did not contemplate the possibility of the phenomena taking place without implicating the brain: but at page 79, I shewed the re-action of the uterus on the hip, and of the liver on the shoulder, of course necessarily in consequence of their nerves meeting in the spinal cord; and the cramps in the calves of the legs, produced by diarrhœa, may be accounted for on the same principle, as I had been in the habit of explaining to my class. The 'relaxation of sphincters from mental emotion,' is *not* explicable on the principle of reflex function nor of re-action, but of direct derivation or abstraction of nervous influence, as explained in the phenomenon of blushing, and indigestion. But I had no idea of claiming originality for what seemed to me plain inferences from phænomena constantly before the eyes of practical men."

Our readers will observe that Dr. Billing claims no small part of Dr. Marshal

Hall's discoveries, and adduces proofs which cannot be easily set aside. But we shall leave the claimants to defend their respective rights, and proceed with our exposition of the merits of the work before us. Our author next alludes to his discovery of the nature of the sounds of the heart, which Bouillaud claims as his own.

"Before concluding this preface, I wish to take the opportunity of adverting to one or two matters which will be found in the work. At page 12, to the note originally published on the heart, I have added, that the sounds depend on, or are produced by, the valves. I would not burden the text with proofs of what I feel assured will shortly be generally received as a fact as well ascertained as the circulation of the blood; but as it is still disputed, not merely by individuals, but by associations, and committees by them appointed to investigate the subject, I will here repeat my arguments already published, which have not, to the best of my judgment, been answered; and, besides, by referring to their own experiments, I think I can disprove their assertions. I first stated publicly, in an Essay read at the Anniversary meeting of the Hunterian Society, (9 Feb. 1832, and reported in Lancet 19 May, 1832,) 'The push or beat is caused by the ventricular muscles in their systole to expel the blood. The first sound is caused by the tension produced in the shutting of the auriculo-ventricular valves, and the second sound is caused by the tension produced in the shutting of the ventriculo-arteral valves,' &c. &c. 'This is a simple unsophisticated explanation of the causes of the beat and sounds of the heart; and you will find that the morbid signs are all explicable as alterations of these.' Some exemplification follows, unnecessary to repeat here. Subsequently Rouanet brought forward the same explanation in his Thesis, which was noticed in the Journal Hebdomadaire (Sept. 1832) and copied into the Medico-Chir. Review (April 1833) as well as an extract from my Essay, in which I had advanced, as I thought, sufficient to enable any practised physiologist to confirm my positions from the suggestions of his own mind; finding, however, from some observations that this did not appear to be the case, I published the following additional remarks in the Lancet, (November 33, 1833.) 'The succession of phænomena of the heart's action is as follows:—First the auricle contracts, then the ventricle, by the action of which the auriculo-ventricular valves are shut, by the pressure of the blood against them. Upon the relaxation of the ventricle, the semilunar valves are shut by the backward pressure of the blood in the artery. The first sound takes place exactly synchronous with the impulsion and action of the ventricle; hence it might be supposed, that the action of the muscle (as averred by some) produces the first sound; but the second sound takes place at a time when there is no action of the heart going forward; and this is peculiarly evident when there is an intermitting pulse, as there is then a marked pulse after the second sound—so that, in fact, there is nothing but the semilunar valves in operation to produce sound at the instant." I have thus shewn the second sound can be produced by nothing but the valves, I have shewn therefore the tension of the valves, to be a sufficient cause for the first sound; and as nil frustra natura facit, according to the laws of reasoning in Physics, more causes than are true or sufficient are not to be assigned (Newt. Princ. Lib. 3 Reg. Phil. 1), so I discard muscular action as cause of the first sound. These are my proofs published between February, 1832, and November, 1833."

"Now as to their experimentum crucis (to show that muscle produced the first sound), putting the finger into the heart after the valves were destroyed, or a sound proceeding from the contraction of the heart, with air, carneæ columnæ, and bloody moisture in it, without the fingers, doubtless there was a souud produced independent of the valves, but not *the* sound of the heart. I say my proof is legitimate, their assertion a sophism of non causa pro causa; it is the tympanic sound of the membranous valves which with the time of the beats produces the rythm; and we judge of the existence of certain states of disease by the degree and manner in which they are out of tune. Looking at the subject physiologically and pathologically, vavular sound is the one we have to depend upon; for granting for argument's sake even that any other exist as a normal accompaniment, it has no more to do with *the* sound than the drone of a bagpipe has to do with the tune. In his last Appendix Dr. Hope began to allow that the first sound may be 'possibly partly valvular,' but stil adheres to the 'bruit musculaire.'

"According to the Report of the London Committee of the British Association the subject appeared to be in the position

agreeing with the vulgar notion of a suit in Chancery. (*Med. Gaz.*, *Dec.* 10, 1836.)

"With respect to the assertion of a celebrated experimenting physiologist, that the sound is produced by the heart coming pit-a-pit against the parietes of the chest, it is only necesfary to refer to Mr. Bryan's beautifully ingenious experiment (Lancet, February 8, 1834), by which he proved, that the heart never quits the anterior, but remains in opposition during both systole and diastole.

"A few days after the Hunterian Anniversary (1832), I gave the same explanation to my class, exemplyfying how the sound was produced, by a strip of paper two or three inches long, and half an inch wide, suddenly stretched, the sound of which was heard all over the Theatre. Dr. Hope subsequently mentioned, in his Appendix 1835, his having employed a piece of tape for a similar purpose. Very recently Dr. Watson has published a case in the Med. Gaz. to shew that disease of the ventriculo-arterial valves masked the second sound. I suppose it had escaped his notice that I published, five years before, not only that fact, but the explanation of what particular kind of disease of the valves would produce a single bruit, and which a double bruit.

"Dr. Watson thinks it possible Rouanet may have had the suggestion, respecting the cause of the sounds of the heart, from Dr. Carswell. It would not astonish me if Rouanet had it from the brain, as well as myself; or, if communicated to him, it was possibly by one of my audience at the Hunterian Anniversary (at which Dr. Carswell may have been present, among a number of other scientific gentlemen,) or by some one of my intelligent pupils, several of whom have since visited Paris. Mr. Bryan published the same theory, (Lancet, January, 1833); but when he became acquainted with my priority, he very candidly wrote an acknowledgment, in a critique on the Report of the Dublin Committee of the British Association, (Lancet, December 26, 1835, and February 27, 1836.)"

Our readers will recollect our articles on the physiology of the heart's action, published in this journal last autumn, in which M. Bouillaud concluded, before any other writer on cardiac diseases, as far as he knew, that the sounds of the heart were valvular. We had not Dr. Billing's work by us at the time, or we certainly should have set forth his claims, and have now much pleasure in doing so.

The next subject alluded to by our author is the pathology and treatment of cholera, but here his observations, like those of his contemporaries, afford us little if any practical information.

"My observations in the first edition were published previous to the terrific visitation of the cholera in 1831. Relying on accurate descriptions which I had received of the disease from my former pupils, and other medical friends in India, I had ventured to add some remarks upon the treatment. Before I had an opportunity of personal observation, I was led to make a too-limited estimate of the symptoms, referring chiefly to the (old English cholera morbus) affection of the stomach and bowels, and thence deducing the collaspe. When, however, I encountered the enemy hand to hand, I saw at once that it was like ague, not merely, as there hinted, in its epidemic and miasmatic origin, but almost, if not altogether, an ague of a fresh type; and I often thought of what the great Sydenham candidly said of his first encounters with new epidemics. From thence I inculcated a system successfully adopted in ague, and borne out by the previous experience of Kennedy, Lefevre, and others, in cholera, *i. e.* bleeding, with emetics and neutral salts, but modified and combined with opium and stimulants in some of the stages. Subsequently, both in the cold stage of ague and cholera, I have depended much upon antim. tartariz., with or without neutral salts, and dispensed more with either bleeding or stimulants, and with even more flattering success. Upon this analogy between cholera and ague I would address a few words to men of practical experience. What is called *the fever*, is well known in India, beginning with chills and shivering, rigors, &c., followed by intense heat; after which, in favourable cases, there is perspiration, with relief of symptoms; but, as we also see here in ague, sometimes the sweat does not come on, but the skin remains hot, in a state of continued or remittent fever. Who that has seen the cholera does not recollect some cases with this routine? Again, *the fever* of India, when it goes through the ague stages, does not, like our agues, continue for weeks, a second, or at most a third paroxysm, is usually fatal, in the severe cases which the physician cannot check. Who has not seen patients die in cholera after they had become quite hot, that fever heat exciting fallacious hopes? There was once an epidemic, the Bombay fever said to have destroyed the patients in the cold stage,

and it was inferred that had the patient lived, the hot stage would have come on: who will decide now whether that was cholera or ague, or which is which? for, though called fever, the description agrees with cholera. Whoever has had much experience in ague, has seen all the modifications of cholera;—the cold stages with convulsions, (clonic spasms,) spasmodic cholera; ague with nausea and diarrhœa, and of course little or no urine, the purging cholera; ague with blueness of the skin and shrivelled fingers, like a drowned person; blue cholera; ague, passing into continued fever: a common termination of cholera, &c. &c."

We have now placed a fair specimen of our author's work before our readers, and leave them to form their own opinions on its merits. It is, in our opinion, entitled to much praise for originality and lucidness in exposition of the science of which it treats.

The London Medical

AND

Surgical Journal.

Saturday, September 2nd, 1837.

HOSPITAL REPORTS.—THEIR VALUE AND EVILS.

When for the first time Hospital Reports were published in this country, and for which important event the medical profession, as well as the sick poor, are indebted to an able contemporary; the great advantage to be anticipated from such documents was, that they would contain a true and faithful account of each case, so that the effects of remedies and surgical operations, and the result of the practice of individuals, many of whom occupied a high position in the estimation of their professional brethren, should be accurately and distinctly known. Hospital Reports faithfully drawn up were likely to possess much value, more particularly to young practitioners, from the great and, indeed, almost insurmountable difficulty, which must be encountered by the student to become acquainted with the result of operations, and the medical treatment of diseases in private practice. Whilst the Hospital Reports which were first published, created great interest throughout the profession, giving publicity to mistakes too often the result of ignorance or carelessness, they excited not only greatest animosities and unjustifiable conduct towards the Editor of the Lancet, and also against those who contributed to that Journal, but ultimately led to a variety of stratagems to conceal from the pupils of the different Hospitals, as well as from the public, the serious medical errors and blunders which the physicians and surgeons of these Institutions were constantly committing. As a last resource they were accordingly compelled to publish Clinical Reports of *their own* cases, for which purpose, so essential to their professional reputation and mundane purposes, was instituted the celebrated Gazette! by which Journal the selfish *subscribers* were each enabled to introduce such an "authentic account" of his blunders and unfortunate mis-givings as he considered best suited to conceal the truth, and blind the public.

The same system of *selecting* cases, and of giving only such *portions* of them as would best suit the purposes of the medical officer, has, we lament to say, been gradually introduced into other Journals, and hence, at this time, the reports of cases which appear in every Journal, except our own, have, generally speaking, been drawn up by interested persons, who have instructions to collect only such cases as may be suitable for the particular purposes of the Editors; or they are drawn up under the immediate direction of the surgeon himself,

such parts being abscinded as might in any way derogate from the supposed talents of the operator, and such *puffings* introduced as shall have the effect of giving a false impression of the results of the operations. But the most effectual method that talented editors and ingenious operators have yet been able to devise, has been that of not taking the least notice of any case, however important, or of any operation, however interesting, when the result has been such, that by any species of twisting or serpentine winding, a detail of the circumstances of the case could not give eclât to the practitioners, far less if there was the smallest danger of any disclosure being made which could injure their professional reputation.

A reference to the medical hebdomedaries for the last few months sufficiently proves the assertion we have now made; and by a reference to this Journal an account of cases of the most interesting importance will be found, of which even no mention is made in the reports of these Journals, which profess to give an account of the practice of certain Hospitals, and which in their stead, contain a detailed account of many cases of the most frivolous description, and from which no instruction neither can nor ever was intended to be derived.

These observations are especially called forth on the present occasion, on account of some cases which occurred in the North London Hospital, and which, notwithstanding the great interest that they excited, and the useful practical, though painful, lessons to be learned from them, were not alluded to by the *special* Journal of that establishment until many weeks after their occurrence, and then only after notice had been taken of them in this Journal.

We are quite aware, and have severely felt, in conscientiously fulfilling our editorial functions, the difficulty we have too frequently encountered in placing confidence in reports and communications from certain quarters; and therefore we are on all occasions ready to sympathize with our fellow-labourers when any individual, or phalanx of individuals, for selfish purposes, have imposed upon an editor. We hazard this observation on the present occasion, because we are convinced the knowledge of the law of libel which the honourable member for Finsbury has so ably exhibited on more than one occasion, as well as his love of justice, and, above all, his regard for the vital interests of the student, would never have permitted the insertion in his independent Journal, had he not been imposed upon, of an article purporting to be an Abstract of a Clinical Lecture, delivered by Mr. Liston, on the fatal case of lithotrity which was lately operated upon by him at the North London Hospital. In that report, which we, in justice to the individual whose professional character has been therein so grossly misrepresented for the purpose of concealing the REAL cause of the patient's death, have printed verbatim in our last number, in order that we may have it in our power, on a future occasion, to expose the whole details of this transaction.

In the mean time, let us anticipate that even should the Editor of the Lancet make no effort to investigate the facts concerning this unfortunate operation, or contradict those statements, which we have every reason to believe will be contradicted in a higher tribunal,—that the investigations which have been instituted by the Members of the University College, and the great excitement amongst the students, will be the means, not only of eliciting the truth, but, on all future occasions, of protecting their students against any one of their own body, who might endeavour

by resorting to unjustifiable means, to injure and blast the hopes or the future professional reputation of their students. Nothing could be so disastrous, far less to the respectability, of a medical school, if any of its teachers was permitted to make use of a reckless authority to the injury of the student; and constituted as University College now is, by charter, they are possessed of the means of protecting the pupil's interests, and controlling the different lecturers, more than the officers of any other medical school of this Metropolis.

THE ANATOMIST.

PECULIARITIES OF THE FŒTUS.

The principal anatomical peculiarities of the fœtus, by which it is distinguished from the adult, are the following:—

The *thymus gland* occupies the anterior mediastinum,—the *kidneys* are lobulated, and each is covered by a cellulo-vascular called *Renal capsule*, which is larger than the kidney itself,—the *liver* is very large, particularly its left lobe,—the *lungs* are compact, and of a deep red colour, and sink in water, the bronchial tubes and their ramifications being void of air,—the auricles of the heart communicate by the *foramen ovale*,—at the bifaccation of the pulmonary artery an arterial trunk about nine lines in length, called *ductus arteriosus*, proceeds to the aorta, into which vessel it opens,—the *umbilical vein* proceeds to the liver, where, having distributed some branches to its left, it divides into the *communicating branch*, which unites with the portal vein; and the ductus venosus, which opens into the vena cava inferior,—the *internal iliac arteries*, under the name of *umbilical* or *hypogastric*, turn upwards and forwards along the sides of the bladder, pass through the umbilicus, and run a tortuous course along the umbilical vein to the placenta, and the urinary bladder is in the abdominal part of the pelvis, from the summit of which a ligamentous chord, called *urachus*, passes to the umbilicus. Until the seventh month the pupil is closed by a membrane, called *membrana pupillaris*, and in the male the *testes*, are contained in the abdomen.

THE CERVICAL FASCIA

consists of a superficial and a deep a layer. *The superficial layer*, which is in intimate connexion with the fibres of the platisma-myoides muscle, is in connexion superiorly with the lower jaw and the parotid gland, and cartilage of the ear of either side; and, extending over the anterior and lateral parts of the neck, is continued downwards over the forepart of the thorax, where it becomes thin and continuous with the common subcutaneous cellular tissue. *The deep layer* passes behind the sterno-mastoid and omo-hyoid muscles; adheres to the upper part of the sternum, the inter-clavicular ligament and the sheath of the carotid vessels, and behind the angle of the jaw, it adheres to the styloid process and stylo-maxillary ligament.

THE SUPERFICIAL FASCIA OF THE ABDOMEN

passes downwards from the thorax over the abdominal muscles, and Poupart's ligament to the thigh. In the median line it passes off the pubis upon the penis, forming its suspensory ligament, and in the female it descends into the labia. In the male it passes on either round the spermatic chord into the scrotum and becomes continuous with the fascia of the perinæum. After having passed over Poupart's ligament it forms envelopes for the inguinal glands and adheres to the fascia lata presenting a cribriform appearance (vide fascia lata); and continuing its course downwards becomes identified with the sub-cutaneous cellular tissue of the lower extremity.

FASCIA TRANSVERSALIS AND FASCIA ILIACA.

The *fascia transversalis* is a layer of condensed cellular tissue, placed between the transversalis muscle and the peritoneum; it is very strong inferiorly, and is connected to the internal tip of the ilium, and to the whole length of Poupart's ligament, and is continuous, behind the rectus muscle, with the fascia of the opposite side. As the external iliac vessels are passing beneath Poupart's ligament, a production of this fascia extends along the anterior aspect of their sheath, and becomes identified with the crebriform fascia in the groin. The spermatic chord in the male, and the round ligament in the female perforate this fascia about half an inch above Poupart's ligament, and midway between the spine of the

ilium and the symphysis pubis; this opening is the internal abdominal ring.

The *fascia iliaca* is much stronger than the fascia transversalis, it is connected to the minor tip of the ilium, passes over the iliacus internus muscle, adheres to Poupart's ligament, from which it passes behind the sheath of the femoral vessels into the thigh, and is connected with the capsular ligament of the hip-joint, and the pectineal portion of the fascia lata. When the fascia iliaca arrives at the outer aspect of the external iliac artery, it sends off a layer of fascia which passes anterior to the external iliac vessels to Poupart's ligament, and from this crosses the femoral ring to become continuous with the fascia transversalis. This layer of fascia forms the *fascia propria* of a femoral hernia. Having sent off this layer the fascia iliaca continues its course behind the external iliac vessels as far as the brim of the pelvis; it here takes the name of *pelvic fascia*. The *pelvic fascia*, from the brim of the pelvis, lines the parieties of this cavity as far as the upper origin of the lavator ani muscle, where it divides into two layers: one layer (the outer) is called the obturator fascia, which descends between the obturator internus muscle and the levator ani, and is inserted into the great sciatic ligament, the tuberosity of the ischium and pubis. The ligaments of opposite sides becomes continuous with each other, by extending across the arch of the pelvis, formed by the rami of opposite sides, and thus form the triangular ligament of the urethra, or the deep perinæal fascia. The *internal* layer of the pelvic fascia, called also *vesical fascia*, passes downwards along the minor surface of the lavator ani muscle to the inferior margin of the symphisis pubis from which it is reflected on the prostate gland and neck of the bladder, forming the anterior true ligaments of the bladder, and laterally it is reflected on the sides of this viscus forming its true lateral ligaments.

THE SUPERFICIAL PERINÆAL FASCIA

adheres to the rami of the ischium and pubis of either side, and extends across the perinæum, being continuous anteriorly with the superficial fascia of the scrotum derived from the superficial fascia of the abdomen.

THE DEEP PERINÆAL FASCIA OR TRIANGULAR LIGAMENT OF THE URETHRA,

is connected, on either side, to the rami of the ischium and pubis, its base looking towards the rectum, its apex towards the sub-pubic ligament, and is pierced by the membranous portion of the urethra, which passes through the ligament about three quarters of an inch below the pubes. It consists of two layers, between which are situated the artery of the bulb and Cowper's glands; one layer *(the anterior)* is expanded on the bulb and keeping that body in its situation; the other *(the posterior)* is continued along the membranous portion of the urethra to the prostate gland, forms its capsule, and becomes continuous on the bladder with the vesical layer of the fascia iliaca.

FASCIA OF UPPER EPTREMITY

Consists of tendinous fibres, which are stronger in some situations than others; it invests the entire arm, and sends partitions between the several muscles. It takes its origin superiorly from the spine of the scapula) adheres to the condyles of the humerus, and to the ridges which lead to them; passes from thence on the forearm, where it is very strong, particularly at its posterior part, and, binding down the several muscles, reaches the wrist-joint, to the annular ligaments of which it is connected.

The *Palmar fascia*, of a triangular form, is very strong, and takes its origin from the anterior annular ligament; from this it expands over the palm, and near the fingers divides into four fasciculi, each of which is forked and inserted into either side of the sheaths of the flexor tendons, and into the ligaments of the first phalanges.

THE FASCIA LATA.

The fascia takes its origin from the crest of the ilium, the spines of the sacrum, the os coccygis, Poupart's ligament, the tuberosity of the ischium, and the rami of the ischium and pubis. From this extensive connexion it extends down the thigh, confining the different muscles in their situation, and also sending partitions between them. At the posterior part of the thigh it adheres intimately to the linea aspera, and at the knee-joint to the condyles of the femur and the capsular ligament; it is then continued over the heads of the tibia and fibula, to which it adheres and forms the fascia of the leg.

Upon the anterior and upper part of the thigh, the fascia lata, from its special arrangement, has been divided into the iliac and pubic portions, and about an inch and a half below Poupart's ligament, and between the iliac and pubic portions of the fascia lata, presents the opening

for the saphena vein. This opening is semi-lunar, the concavity being directed towards Poupart's ligament; it presents an internal and external cornu, and its edge, turning inwards on itself, becomes continuous with the sheath of the femoral vessels.

The *pubic portion* of the fascia lata covers the pectinæus muscle, adheres to the spine of the pubis and the linea ileo-pectinea, passes behind the sheath of the femoral vessels, and becomes continuous with the fascia iliaca.

The *iliac portion* of the fascia lata covers the sartorius, tensor vaginæ femoris, rectus and iliac muscles, and presents, towards the pubic portion, a *crescentric* or *falciform edge*, the aspect of which is directed downwards and inwards; the inferior cornu of this edge is continuous with the outer cornu of the saphenic opening and its superior cornu extends along Poupart's ligaments, crosses the femoral vessels and is inserted into the linea ileo-pectinea.

The *cribriform fascia*. The superficial fascia, in passing over Poupart's ligament to the groin, adheres to the crescentic edge of the fascia lata, and to the edge of the saphenic opening, and is attached to that layer of the fascia transversalis, which passed anterior to the sheath of the femoral vessels; this portion of the superficial fascia is perforated by numerous small blood-vessels, and by the anterior superficial absorbents of the limb, which gives it, when distended, a cribriform appearance, from which it derives its name.

The *fascia of the leg* adheres to the heads of the tibia and to the spine of the tibia, to the annular ligaments of the ankle-joint, and to the malleoli; it binds down the muscles, sends partitions between them, which pass from its posterior surface to the bones of the leg and intercosseous membrane, and from the anterior annular ligament it is continued thin upon the dorsum of the foot.

The *Plantar fascia* is very strong, and arises from the under aspect of the os calcis, is attached to the sides of tarsus and metatarsus, and sends to processes between the muscles of the sole of the foot, dividing them into an internal, a middle, and an external set. At the base of the toes it divides into five portions, each of which bifurcates, and is inserted by its two fasciculi into the lateral ligaments of the joints, and into the sheaths of the flexor tendons. This fascia is strengthened by transverse fibres.

DR. ELLIOTSON AND THE APOTHECARIES' COMPANY.

To the Editors of the London Medical and Surgical Journal.

Gentlemen,—The letter signed "A Lover of my Profession," which appeared in one of your late numbers, is, I am very sorry to say, calculated to do serious injury to the classes of the London University College next session. The open attack of Dr. Elliotson on the Worshipful Company of Apothecaries, has tended to create already great alarm in the minds of several students, and I know one gentleman who has declined, for the present, to go up for examination at the Hall, until the sore effects of Dr. Elliotson's stinging attack have, in a degree, subsided. It is almost a pity that Dr. Elliotson did not, in the first instance, write a letter to the Court of Examiners of the Apothecaries' Company, on the manner in which they examined HIS pupils, before appearing so hastily in public. I, myself, have been a pupil of Dr. Elliotson's, and I have derived great and many useful hints from studying the doctor's lectures and practice. I am not, however, a Licentiate Apethecary, and as my answers to many questions, which doubtless I might be asked at my examination, would be given in the, to me correct, phraseology of Dr. Elliotson, I am as fearful to present myself as my friend, for fear of rejection.

I had hoped that the absurd letter I have alluded to, would have produced but little interest in a certain quarter, but I assure you such is not the case; for myself and others know, from unquestionable authority, that it has been quoted in a spirit of triumph against Dr. Elliotson. I am, Sir,

Your obedient servant,

A STUDENT OF UNIVERSITY COLLEGE.

LABOUR, WITH PLACENTAL PRESENTATION, WHERE TRANSFUSION WAS TWICE PERFORMED.

Reported by Mr. JOHN JAMES JACKSON.

Hannah C——, aged 39, a delicate-looking woman, with dark hair and eyes, and of a consumptive family, applied on the 3d of December, to be attended from

the Guy's Hospital Lying-in Charity, with her ninth child. She stated, that her feelings were different to what they had been during any previous pregnancy; and that, at times, she experienced an uneasy sensation, which she referred to the womb. She likewise had a cough, which was relieved by the common linctus of the hospital. On the 18th, when getting out of bed, she was seized with a severe fit of coughing, followed up by a sudden discharge of blood from the uterus, amounting to about half a pint. When I saw her shortly afterwards, her countenance and general surface were exsanguineous; pulse 100, irritable; considerable dyspnœa, with an anxious aspect; bowels constipated. She was ordered, acid. sulph. dil. m.x.; mag. sulph. ℥i.; inf. rosæ comp. ℥xij.; to be taken immediately, and repeated every five hours. All the bed-clothes, except a sheet, were withdrawn; and she was cautioned to take no warm fluid; to retain the recumbent posture, with elevated hips, and perfect quietude. In the evening, she was greatly improved: her pulse had fallen to 82, and the hæmorrhage had entirely ceased: she complained of grinding pains, for which she was ordered opii gr. i., to be taken at bed-time. The remedies being continued for a few days, she recovered from her weakness, and could not be kept quiet any longer. On the 14th of January, at three o'clock in the morning, I was again sent for; and found she had lost nearly a pint of blood; owing, as she thought, to anxiety of mind, caused by the recent loss of several relatives, the dangerous illness of her brother, and the unkindness of her husband, who had alarmed her, by his violent behaviour, that night. I exhibited similar remedies to those used before; enjoined a strict observance of the horizontal position, her hips being raised by a firm cushion; and applied cloths dipped in cold vinegar and water to the lower part of the abdomen. This was attended with success, as far as regarded the bleeding; though the pains continued at intervals till Friday night, the 22d, when suddenly there was another discharge of blood: her spirits became depressed; her pulse quick, and small; severe pains occurring every twenty minutes, accompanied with the expulsion of clots of blood: the liquor amnii was also trickling away. Availing myself of a pain, I examined, and found a small portion of placenta projecting over the posterior edge of the os uteri, which was yielding. I now sent for Mr. Lever. After his arrival, there was no further uterine effort, or bleeding: the pulse was 120, small, and the patient excessively low: on examination, he found the presentation, as stated—the os dilatable, and the head within reach. He ordered tinct. opii m. xxv., and enjoined quiet. During the two following days, the liquor amnii continued to escape: she was more comfortable; took her medicine; and, an anodyne being exhibited at night, she slept tolerably well. On Monday morning, although no subsequent hæmorrhage had occurred, there was sudden dyspnœa, with jactitation of the upper extremities; pulse quick, and small; no uterine effort; and every indication for a speedy emptying of the uterus. I ordered brandy, slightly diluted with water, to be administered to her, by means of a tea-spoon, every five minutes; and went for Mr. Lever, who immediately delivered her of a still-born child, by turning; Dr. Ashwell being present. After the child had been withdrawn, and the placenta removed, Mr. Oldham and myself alternately continued a steady grasping of the uterus for several hours; during which she had some mild nourishment, with brandy given to her at intervals. The hæmorrhage consequent on the turning, although slight, had been sufficient materially to aggravate her already prostrated condition. The abdomen was tightly bandaged; and she was desired to keep perfectly still, avoiding even conversation with those around her. An opiate was given in the evening, but she obtained little sleep. Early on Tuesday morning, she begged to have her linen changed, and the nurse, unfortunately, acceded to her request: soon after which, the jactitation of the limbs became more violent, and it was found impossible to prevent her throwing herself about on the bed: she spoke incoherently about her brother; and it was evident she was rapidly sinking. I gave her brandy repeatedly, and the julep ammoniæ at intervals, but without success. At 3 P.M. Mr. Tweedie performed the operation of transfusion, taking the blood from Mr. Lever; and about ℥vij. were injected into the median basilic vein. The effect of this, for a time, was surprising: her pulse, from being excessively rapid, and at times imperceptible, became full and distinct; her eyes regained their natural expression; and she spoke rationally and calmly. We now gave her tea-cup-full of rich soup, repeating it and the brandy, at intervals, every quarter of an hour. At 4 P.M. she had

again relapsed into a state of insensibility; when Dr. Ashwell repeated the transfusion, taking blood from her husband: she, as before, rallied for a time, but not to the same extent; then rapidly sunk, and expired a few minutes after five o'clock.

REMARKS.

This case is instructive, as shewing that not only after large hæmorrhages, but even where the loss has not been so considerable, there is something wanted to revive and re-establish the living principle, which the supply of blood cannot furnish; and although I am far from believing that in all the instances where the recovery has followed transfusion, the result would have been equally favourable without it, still I believe that an exhausted brain, even where sensibility remains, cannot be thus restored, where real sinking has fully set in.

PREGNANCY WITH IMPERFORATE UTERUS.

Reported by Mr. TWEEDIE.

Eliza P——, aged 23 or 24, an Irish woman, residing at 105, Little Suffolk Street, Southwark, a patient of Guy's Lying-in Charity, was taken in labour, with her first child, on the 14th or 15th of November, 1836. Mr. Roe, the gentleman to whom the case had been entrusted, was called to her at seven o'clock in the morning. He was informed that she had been in strong pain since the preceding evening, but there had been no show as yet. Mr. Roe observed the pains to be urgent and very powerful; but although he remained several hours with her, he had not succeded in discovering the os uteri.

Puzzled with this novelty (for he had attended a great number of confinements), he requested me to visit her. It was now two o'clock: the patient was on her bed. On examination, I found a firm, uniform, globular mass forcing down into the vagina at every pain (which was of great force), but no irregularity upon its surface could be detected; and a very careful examination of the entire vagina, whose extremity was easily reached at all points, failed in detecting the os uteri. As her bowels had been confined for two days, Mr. Roe had administered a dose of castor oil: so we waited a few hours, to see what nature would do, as well as to afford the oil time to operate.

In the evening, I again met Mr. Roe, to see the patient. Labour-pains had persisted, and were of unusual severity: the castor oil had acted once A most careful investigation of every part of the vagina failed to detect any os uteri. At the upper part of the canal, at each pain, there was forced down this tight, tense, globular body, of the bulk of the child's head; and conveying the impression of an entire uterus, without orifice.

About the spot where the os uteri should have been, was a minute portion, somewhat thinner than the surrounding parts; but the whole was uniformly smooth, and contained no break whatever.

On the receding of the mass, in the absence of the pain, something like a child's head could be felt within.

Inquiries were now made, and the following facts elicited:

Mrs. P—— was married on the 4th of February preceding, 1836. Since the age of 14, she had menstruated every four weeks, sometimes every three weeks. The discharge was always pale and scanty, and continued from two to three days. She never suffered pain at those periods. She has not menstruated since her marriage.

Both before and subsequent to her marriage, she has had robust health; and, in the necessary duties of her vocation, has undergone an unusual degree of laborious exertion, but she has not had a day's ill health. For two or three days before labour came on, she noticed a rather copious reddish discharge, that continually drained from her: but there was no pain. On the subsidence of this, about the 12th, slight pains in the back were felt; which went on till the night of the 14th, when they assumed the severe and urgent character which occasioned her to summon her medical attendant at the time already stated.

Having satisfied myself, at this second examination, that there really was no orifice into the uterus, and the pains continuing of a severe character—and the existence of a living child being proved by the pulsations of the fœtal heart, which were distinctly audible, about twice as fast as the mother's pulse—I sought the advice of Dr. Ashwell.

The Doctor lost little time in arriving: and having, by a most careful investigation, positively confirmed the statement of the condition of parts already made, he determined upon loosing no more time in making an artificial opening across the above-named spot, where the globular

body seemed slightly thinner than elsewhere. The patient's pulse was about 120 to 130: very irritable; the pains violent; the skin irregularly hot and cold; the features anxious; the mind irritable; general restlessness: the bowels had now been twice relieved by castor oil. Accordingly, having placed her on her left side, the Doctor introduced his left fore-finger as a director; upon which he passed up a curved, sharp-pointed bistoury with his right hand; and having punctured the spot already fixed upon, he incised forwards towards the bladder (which was empty), and backwards towards the rectum. At this last incision, a few drachms of dark blood flowed out. The liquor amnii of course escaped; and the head fell upon the artificial opening, which proved to be of the diameter of an inch and a half, or perhaps nearly two inches, and about a line in thickness.

The Doctor did not incise laterally, lest he should wound any of the branches of the uterine arteries. At one o'clock A.M. of the 16th, he left the patient, in charge of Mr. Roe and myself. The pains abated for a brief space after the operation, the performance of which occasioned no suffering; so that she seemed not to be conscious of any thing, beyond the inconvenience of manual interference. Pains, however, recurred; but little advance at dilatation appeared to be made for some time, till about four A M., when, under the influence of a severe pain, the edge of the orifice tore suddenly towards the right side; and soon after, another rent took place, whilst my finger was at the part, backwards, towards the left sacro-iliac synchondrosis. At this, she became faint: the pulse was 140 or 150, feeble; the skin cold and clammy; and she fell exhausted. Æther, ammonia, brandy and opium, were administered, and she rallied. After resting for about two hours, pains recurred gradually, and became as powerful as at any previous time.

The extent of the laceration on the right side could be reached by the finger; it had not extended to the reflection of the vagina: that on the posterior part was beyond reach. No gush of blood attended these lacerations. The head became engaged in the pelvis, and was delivered at 11 A.M.

The latter pains were very inefficient; and much stimulant was administered towards the close. With the child there was a more than usual degree of hæmorrhage: the infant (a male) was asphyxiated, and was with difficulty revived.

The placenta was taken away in half an hour, and the uterus contracted well. Nothing further could now be detected, on examination, but several ragged shreds about the orifice at the top of the vagina.

The tongue was dry, and brown at tip; the head ached; the pulse was 110, jerking, (doubtless referrible, in some degree, to the stimulants). Towards the close of the labour, the bowels had afforded three copious motions.

A day or two after the last-reported visit, the discharge assumed a reddish character, and so continued between three and four days: it commenced, continued, and ceased like the catamenial fluid, and was attended by no increase of symptoms. She is now nearly free from discharge; and though weak, is at the tub, washing.

The following is the result of a careful investigation:—The vagina is short: its extremity, and every part of it, can be readily reached by the shortest fore-finger: it presents no other peculiarity.

There is no cervix uteri. The uterus seems reduced nearly to a normal unimpregnated size. At the extremity of the vagina, there is a puckered irregular orifice, into which the tip of the finger can enter: it is soft, with smooth and thick edges, not perfectly circular, in consequence of certain indentations, as if from the drawing together of several small rents.

It might be compared to the base of an apple; whilst this part of a normal uterus would better resemble the apex of a pear.

Radiating from this central aperture, can be distinctly felt three ridges, like lines of adhesion; one passing forwards, towards the right ilio-pubic junction, traceable nearly to the reflexion of the vagina; one opposite to this, backwards, towards the left sacro-iliac synchondrosis, whose extremity is lost in the reflexion of the vagina; and the third, of short extent, about one-third of an inch long, passing backwards and to the right. These were distinctly ascertained, by both Mr. Gaselee and myself, to centre in, or radiate from, the aperture above named.

REMARKS.

This case is so singular, and is so accurately detailed, that it is scarcely necessary to make more than a single observation. I am not aware that a precisely similar instance is anywhere recorded: nor do I think that there can be any hesitation about the treatment proper to be employed. The safety of the incision consists in its prevention of unlimited and extensive laceration. So long as the

division by the knife, and the subsequent tearing of parts, is confined to the os and cervix, and does not extend beyond the reflexion of the mucous surface of the vagina over these parts, recovery is highly probable: whereas, if the parts be left to rupture of themselves, the body and fundus of the uterus, and their peritoneal investment, are pretty sure to be implicated, and the result will most probably be fatal.—*Guy's Hosp. Rep.*

ON ATROPHY OF THE HEART.

By Professor Albers.

Professor Albers thinks that the English, French, and German practitioners have mistaken the accidental smallness of the heart for the real atrophy of this organ, in persons dying of phthisis, diabetes, cancerous diseases, &c. &c. But in the same individuals other organs are reduced to a small size, and if in these cases we examine the heart, its thickness will be found to correspond with the cavities; its weight, colour, and consistence are generally the same as in its normal state; and as during life, the accidents depending on a change in the heart have not been observed, we are authorized to enquire if the smallness of this organ may not be considered as a morbid state.

If the hypertrophy consists in the thickness of the walls, without any marked increase of the organ, as hypertrophies are found without this increase, hypertrophy cannot exist where the thickness of the coats is normal, and when decrease of size is the only apparent phenomenon In this view of the case, according to Laennec, Andral, Bouillaud, there will be no real atrophy; this state of the heart must be termed a normal smallness, and not atrophy, it should be rather classed as microcephaly of the micropthalmia.

Professor Albers has been so fortunate as to witness real atrophy of the heart, which has no connection with the smallness of the heart mentioned by Laennec, and which is directly contrary to hypertrophy. Real atrophy of the coats with their cavities, in a normal size, constitutes atrophy of the heart. The heart is less ponderous than usual.

Thus, the heart of a strong man, after the vessels were taken away, weighed two ounces and a half; a weight not only anormal, but having very little connection with the size and strength of the individual. The thinness of the walls in these cases is remarkable; the wall of the left ventricle is not so thick as that of the right is naturally, and the wall of the right ventricle is equal in thickness to the auricle.

In cases where the heart weighed two ounces and a half, the walls of the left ventricle had at least one line and a half of thickness, and the right ventricle one line. In the other cases the left ventricle had immediately above the tricuspid valve two to four lines, and if we admit seven or eight lines as normal thickness of the ventricle, on this point the difference will be found very great.

In all these cases the thickness of the walls had every where decreased: they were soft, and of slight consistence; the colour of the muscular substance was sometimes dark brown, sometimes pale. The heart is rather dilated, particularly towards the right auricle, which is the consequence of the slightest resistance that the muscular atrophied mass may oppose to the blood. Atrophy may be circumscribed to the right or left of the heart. Professor Albers had met with atrophy of the right heart

This atrophy of the heart exists without atrophy of the other organs, and without phthisis.

The following symptoms, according to Professor Albers, are the characteristics of this disease:—

In the first instance, there is difficulty in the respiration; the patients are much agitated, and cannot sleep; slight cough; respiration is difficult, and sighing frequent; the heart beats irregularly, and the patients feel a sort of shuddering at the precordial region; the hand applied to this part does not feel the heart beating. by the stethoscope they appear very weak. These phenomena return by fits, and are in these moments very manifest.

The pulse, during these fits, becomes insensible, and afterwards beats 120 and 140 pulsations. These fits last two or three days, and then diminish till there remains nothing but oppression and weakness in the beating of the heart. In the early stages of the disease, these fits occur every two or three months; they afterwards become more frequent. The chief cause of this disease is long continued sorrow.

A woman of middle age, good constitution, had given birth to eleven children, and had just been naturally delivered of a twelfth. For seventeen years she had been tormented by her husband's ill tem-

per; she led a sorrowful and unhappy life; for the last twelve years she had been troubled with constant head-ache and oppression; she felt an anormal shuddering at the precordial region, with the pulse, or pulsations of the heart being scarcely perceptible; she seemed in a state of great anxiety, and had a slight cough. During this period she was confined five times; the catamenia appeared regularly, and excepting during her attacks when she was obliged to keep her bed, she seemed in good health, and walked up stairs with perfect ease After having consulted several medical men, without deriving any benefit, she came to Bonn to ask my advice.

When I first saw her, there seemed great oppression and anxiety; she could not sleep, was very pale, the extremities were cold, the pulsations of the heart and pulse insensible; the stethoscope only conveyed slight dumb sounds. These symptoms were somewhat allayed by repose and slight derivatives; the beatings of the heart were restored, but they were weak and almost imperceptible; the oppression remained, and the hysteria frequent. A month after the last confinement the patient caught cold, and died in a week.

On a post-mortem examination, besides lesion of the lungs, the heart was soft, separated from the large vessels; it weighed three ounces and a half. The wall of the left ventricle had three lines in the thickest part; the right ventricle rather more than a line. The right heart was slightly dilated The heart was atrophied in all directions, and the fleshy pillars were smaller than usual.

Mr. de B——, strong and well constitutioned, fell from his horse, ten years since, after which he had an inflammation of the brain; he recovered, but continued in a state of melancholy. He was impressed with the idea that a great misfortune was to happen to him, which made him melancholy, and deprived him of sleep. In the latter years of his life, the beatings of the heart was so weak that they were not felt, and could scarcely be heard; the pulse was very weak.

The patient had continued in this state six years, when having been caught in the rain, he had an attack of gastric fever, which was speedily cured by evacuations. But when the fever had disappeared, a pain was felt between the tenth rib and the ombilic. There was tension in the hypocondrium; want of appetite, great thirst, constipation, fever came on, the pulse was 120 to 140 pulsations, aed the patient died in the course of five weeks.

Thirty-two hours after death, a post-mortem examination was made; there was nothing remarkable in the cavity of the skull, excepting three osseous protruberances existing in the internal side of the occipital, which depressed the dura mater and the pia mater, which were thick at their level. The heart was small, soft, and flaccid; of a deep red; separated from the large vessels; it weighed two ounces and a half. The left ventricle was two lines in thickness; the right one a line thick. The cavities were empty; the fleshy pillars were so thin, that the largest was only one quarter of a line thick.

In the abdomen the capsule of Glisson formed a pouch filled with pus, the size of the fist; the serous of the liver, the intestines, the cellular tissue, contributed to its formation. It was filled with pus, two large biliary calculi, and several small ones; beside which it contained the remains of the biliary vesicule, and the cystic canal, which was obliterated. The hepatic and choledoc conducts were free, but deviated, and red. The stomach, the duodenum, and the vena porta, were slightly adherent; the peritonitis was injected all round.

TREATMENT OF PLEURITIC EFFUSIONS.

By M. Baudelocque.

Hospital for Sick Children.

Pleurisy does not spare children more than adults. This phlegmasia gives rise to serous sero-albuminous, purulent, and sero-purulent effusions. When the patients come to the hospital in the early stages of the disease, and there is inflammation of the pleura, intense fever, acute pain in the side, dyspnea carried to a high degree; the vein may be opened, if the age permit; if not leeches or cupping on the side the pain is felt. When notwithstanding the antiphlogistic treatment adapted to the age of the patient, and intensity of the phlegmasia, the effusion is formed, or else, if the patients are received into the hospital at this stage of the disease, the following treatment is had recourse to, and has proved most beneficial when there has been no complications of the malady. No bleeding, either local or general; no derivatives; no blisters, nor

setons, nor stibiat plasters on the affected side of the thorax.

The patient should keep his bed, wear a flannel jacket, take little food; these simple means have sufficed to induce reabsorption of effusions filling the whole of the pleura. Thoracenthesis was not even thought of. This mode of treatment has now been resorted to for five years, and has proved most beneficial.

The same rules are applicable in pleuritic effusions of adults, and they afford equal benefit.

M. Lombard de Genève, ignorant of M. Baudelocque's experiments, wrote as follows on the treatment of pleuritic effusions:—

"Some time since, I judged it right to have recourse to very active treatment; cupping, blisters, mercurial frictions, and frequently repeated purgatives; but I found this active therapeutic did not generally accelerate the reabsorption of the purulent liquid; so that I am at present rather inclined merely to advice the use of hygienic means, at least in cases unattended with fever, cough, and difficulty of breathing.

"The last cases I treated without any medication, went on very favourably, and quite as speedily as when active medicines were administered. However, I give this opinion with diffidence, intending, at a future time, to make known the result of clinical experience, which can only be solved by figures."

The results obtained by M. Baudelocque, for the last four or five years, leave no doubt as to the superiority of this method. Among the most recent facts, we shall give the following;—

Pleuritic effusion on the right treated by simple hygienic means; speedy reabsorption.

Barbe Blondin, a child of nine years old, strong constitution, general health good, was received in the hospital, having been ill a month.

Cough, pain in the right side of the chest, dyspnoea, vomiting; the young patient was obliged to keep her bed for a week. During the three following weeks the pain in the side was gone, but the cough continued; the right side of the chest was developed; there was no fever in the morning, but it came on at night; the appetite was good, but the strength did not return; and the parents made up their minds to bring the child to the hospital.

The 3rd of January she was in the following state:—lying on her back, natural countenance, pulse 90, respiration 24; heat of the skin natural, dry and frequent cough, no expectoration.

We proceed to the exploration of the thorax, and we find a morbid complication on the right side. The circumference of this side exceeds that of the opposite side by an inch and a half; the sound is *most* in the two lower thirds of the right side; the respiratory noise is slight and distant in the middle parts; there is none in the inferior ones. There is no bronchic or bronchophony, or egophonic respiration heard. On the left side there is tympanic sonorousness; the respiratory noise is clear and loud in the whole extent of the lung; the tongue is large and moist; the appetite good; stools scanty. The chest was covered with flannel, and infusion of marshmallows taken as a beverage, and broth.

On the 4th, the percussion and auscultation of the thorax furnished the same signs, and confirmed the diagnostic obtained the preceding day.

On the 10th the chest was measured, and there was little difference between the right and left side. The respiratory noise is louder, the cough is less frequent, the functions are in a fair state; broth twice a day.

The 20th of January, a diminution of nearly half an inch on the affected side; the pulse is calm, the heat of the skin natural, respiration free, urine abundant, and daily stools. A quarter of the infusion was given, and the patient allowed to walk up and down.

At the end of the month no difference existed between the two sides of the throat; the sound was nevertheless clearer on the right than on the left, probably owing to the presence of false membranes. The patient left the hospital early in February.

The result of auscultation and percussion of the thorax when the patient was first put under our care, left no doubt as to the existence of an effusion in the right pleura. These signs, as we have already had occasion to notice several times, are as striking as in the adult.

This effusion had been preceded by acute inflammation of the pleura, which had taken place a month back.

A phenomenon we had forgotten to notice, and which a few days before her admission into the hospital, had given great uneasiness to the mother, was vomiting after the evening repast; this is easily accounted for; the child's appetite was good, and effusions are towards even-

ing generally accompanied by slight fever, which interferes with the digestion. Vomiting did not take place in the hospital, because the regimen was more strict. Under the influence of this regimen, and repose, the absorption of the effusion took place, and by the assistance of percussion, auscultation, and mensuration of the chest, we were enabled to watch the disease.

ON THE TREATMENT OF ACUTE RHEUMATIMS, BY STRONG DOSES OF NITRATE OF POTASSIUM.

M. Gendrin, physician at the *Hôpital de la Pitiè*, has written a paper on nitrate of potassium administered in strong doses in the treatment of rheumatism. This medicament was given to five patients exclusive of every other remedy. Four of these patients were rapidly cured, and the fifth still being treated; the pain after having attacked various articulations had settled in the knees.

Nitrate of potassum was administered to all the patients in the following manner. A quart of barley water with three drachms of nitrate of potassium to be taken every day, besides a mixture of eight ounces, containing three or four drachms, of the same salt, with a few drops of nitric acid to dissolve the precipitate.

As to the regimen, it was broth one-eighth, quarter, half, three quarters. With the exception of one patient, they all become used to the medicament.

The most immediate effect of the treatment was the cessation of fever. The most remarkable secretion, the urine, which has always been considerably increased.

This treatment was adopted in the following cases.

A coachman, forty years of age, was admitted into the hospital the 31st of October. He was attacked with rheumatism for the second time. The second day he had acute pain between the shoulders, fever, and shivering; soon afterwards, a pleurodynic, which disappeared the fifth day; both the knees, feet, and scapulo-humeral articulations were invaded. Nitrate of potassium was administered. The fever gave way on the fifth day, the pleurodynic on the ninth. All the other pains disappeared excepting those in the knees, which persisted to the thirty-sixth day. The other case was more fortunate. A woman aged forty was also attacked with rheumatism the second time. She had been ill five days when she came to the hospital. The wrist, the hips, the knees, the right-foot, were successively invaded. The pain shifted from the right to the left side five days after her entrance, and all the articulations were attacked.

The influence of the treatment was only felt on the eleventh day. The fever was gone, and the other accidents gradually disappeared. The patient left, perfectly cured, after thirty days treatment. The three other patients were subjected to this medication for eight, fifteen, and twenty days —*The Continental Rev.*

ON THE USE OF TANNATE OF LEAD IN GANGRENOUS SORES.

By Dr. Yott.

This medicament was spread on a sore of a young girl, attacked with a severe nervous fever, whose shoulders, vertebræ, sacrum, left thigh, had become the seat of gangrenous eschars, some of which were very deep. Hitherto all topical applications had failed giving relief, but the sore was healed a fortnight after the *tannate* of lead had been used. This same medicament had not succeeded when put in a liquid state on the gangrenous sores of a young girl who had a nervous fever, with ulcers on both thighs, yet proved most successful employed with salve. Used in this manner, with a little boy four years old, his gangrenous sores were healed in a week.

Tannate employed in this case was obtained by pouring acetas plumbi, drop by drop, on a decoction of oak, until there was no precipitate, then leaving the liquid to settle, and collecting the precipitate from the bottom of the vessel. Spread it on a bit of linen as if for a plaster. The salve used in this case is employed in the following manner:—

Dried Tannate of plumbi	2 drachms.
Salve	1 ounce.

Well mixed and applied to the sores.

All communications and works for review to be forwarded, (carriage paid) to Dr. Ryan, 4, Charlotte-street, Bloomsbury-square.

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LECTURES ON DISEASES OF THE SKIN,

Annually delivered in Paris,

By M. Biett,

Reported by MM. Cazenave and Schedel.

SCARLETINE.

(*Scarlatina.—Morbilli confluentes.*)

Scarlatina is a contagious exantheme, presenting itself in the form of small red points, soon succeeded by large irregular spots, of a raspberry tint, which by uniting generally covering large and extensive surfaces A fever more or less ardent, and more or less intense, symptoms of irritation of the mucous membrane of the mouth and larynx precede and accompany the eruption.

It is generally speaking from the third to the sixth day after exposure to contagion that scarlatina becomes developed.

Symptoms.—With respect to the severity of the symptoms, this disease presents many varieties; it may be very slight, at other times it is more severe, and oftentimes complications of greater or less severity excite alarm for the patients life, which the most judicious treatment does not always succeed in saving.

Scarlatina in general commences towards evening and suddenly, by a febrile accession accompanied with depression, momentary shiverings, nausea, pains in the loins and in the lower extremities. The pulse averages from 120 to 140 a minute; respiration frequent and irregular. The skin on the trunk is hot, the feet cold; in some cases, but seldom, convulsions occur.

On the next day, and sometimes even during night, the eruption appears; at first occupying the neck and face, it then spreads over the entire body in the space of twenty-four hours. It consists in a multitude of small red points, crowded so closely together, that the skin presents a general red tint, and feels rough to the touch. This membrane is at the same time the seat of an intense heat, and of very troublesome itching. Large spots of a bright raspberry red colour occupy those regions on which the body rests; the colour is likewise much deeper in the folds of the joints. Not only the skin, but the tongue also, the pharynx, the velum palati, the inner surface of the eyelids, nostrils and cheeks, are at this period of a scarlet red colour, and deglutition is at the same time painful.

Oftentimes the edges and apex of the tongue alone present this tint, whilst its surface is covered with a whitish coat of mucus, through which the papillæ point and project more or less, presenting a bright red tint.

The eruption is generally accompanied with greater or less disturbance of the system; sometimes there is delirium and drowsiness, and swelling of the face and extremities. In some cases the febrile disturbance diminishes in severity on the appearance of the exantheme; but it usually continues as also the other symptoms, as for instance, the burning thirst, general heat which is very annoying, nausea, constipation, and greater or less difficulty in swallowing.

The raspberry redness of the exantheme is always more intense at night, more especially from the third to the fourth day; it begins to diminish towards the fifth and ordinarily disappears towards the seventh, the period desquamation sets in.

The different symptoms which accompany the eruption disappear with the exantheme: deglutition becomes easy, but the redness of the tongue continues; often a copious sweat takes place at this time,

or diarrhœa; or else the urine deposits a sediment which is sometimes very copious. The furfuraceous and frequently lamellated desquamation is accompanied with a very troublesome itching; it may be prolonged for a very considerable time, sometimes for thirty or forty days, and be several times renewed. (*Scarlatina simplex*, Willan.)

Such is the course of the slightest variety of scarlatina, the duration of which is from eight to ten days. But in other cases the fever is higher, and above the angina is more severe; it is the predominance of this last symptom which has procured for this variety the name of anginous scarlatina (*Scarlatina anginosa*, Willan.)

In this last variety the angina often precedes the fever, and the precursory symptoms of the eruption are much more intense than in Scarlatina simplex. The patient from the very commencement complains of a strong sensation of rigidity in the muscles of the neck and lower jaw: the mucous membrane of the pharynx is intensely red. The constitutional symptoms soon become developed: from the second day the tonsils are very much swollen, the voice becomes hoarse; deglutition is very painful and difficult, sometimes even impossible: the drink is then passed by the nazes, the breathing is more or less embarrassed, and a very painful sense of constriction is felt in the throat.

The other symptoms are great frequency of the pulse, great heat of skin, headache, drowsiness, slight delirium, epistaxis, nausea, and sometimes vomiting.

In this variety the exantheme presents nearly the same appearances as in the scarlatina simplex; but it does not always show itself well the second day; often it does not appear till the third day. It is also less generally spread. and it consists of broad scarlet spots of an irregular form, scattered over different parts of the body, but more particularly over the parts on which the patient rests. In many cases the pillars of the velum palati, the amygdalæ and pharynx are covered with thick mucosities, or with flocculi of a pultaceous substance of greyish white colour, which sometimes continues adherent for several days, and is sometimes renewed in the twenty-four hours. In general no ulceration is observed on the tonsils; sometimes, however, slight ulcerations are observable on these glands, on the velum palati, or at the posterior part of the pharynx. The pultaceous exudations may be coloured black by extravasated blood; the tongue often is dry, as also the lips, which are chopped; and the blood on drying forms black crusts which cover their surface.

In this variety the exantheme often disappears in the space of twenty-four hours, and sometimes re-appears in an irregular manner in different regions at different periods. In these cases the constitutional symptoms are seldom aggravated; but the duration of the disease is prolonged, and the desquamation less regular. This termination may not take place even when the exantheme has been very slight, whilst in other cases the desquamation still continues beyond the third and fourth week.

Besides, in this variety there is a vast number of degrees, the most prominent characters of which it is sufficient to have presented. The angina is the most obstinate symptom.

Scarlatina may again assume a still more serious form, and then it goes by the name of Scarlatina maligna (Willan). But the fact is, all these varieties are in reality mere degrees of severity; and the disease from being slight at first, may soon become malignant.

The *Scarlatina maligna* presents at the onset the same symptoms as the preceding; but it soon exhibits after the first or second day characters of an extremely serious nature. The eruption ordinarily appears in the twenty-four hours, but it is often slow. There is considerable sinking, burning thirst, dryness of surface and burning heat of skin; much anxiety and oppression, vomiting: fullness and frequency of the pulse. At the end of some hours the symptoms have still further increased in severity; great agitation and delirium supervene; the tongue becomes dry; the pulse loses its strength, but not its frequency; the skin is always burning, the eyes are injected and languid, the eyes are of a crimson red colour, the breath is fetid, and a blackish exudation covers the tonsils and the adjacent parts. In young children there may be coma, stertorous breathing, swelling of the neck, retroversion of the head; at the same time the pulse which is scarcely perceptible is very much hurried. Sometimes there supervene hemorrhages either nasal or intestinal, or an eruption of petechiæ, the extremeties soon become cold, and the patient dies. This fatal termination often occurs without the eruption having disappeased or even become pale, and the acrid heat of the skin sometimes continues even to the last moment.

This variety may, as we have said, ter-

minate in death, which supervenes at the end of some hours, or which may not take place till the end of the second, third, or fourth day, or even at a later period. When the patient does not die in this way, very serious consequences may follow. Gastro-intestinal inflammations may supervene, and profuse suppuration succeeding ulcerations may form in different parts of the body.

Different cutaneous inflammations may complicate scarlatina. A miliary eruption frequently occupies the chest, the temples, the neck, the hairy scalp, the shoulders, and soon disappears, either by absorption, or by the effusion of the fluid contained in the vesicles. The complications of scarlatina with measles, erysipelas, and small-pox, are much more uncommon.

Plastic inflammation (angine couzenneuse) of the mouth, pharynx, and posterior nasal fossæ constitutes one of the serious and unfortunately rather common complications of scarlatina anginosa and maligna. Most of the epidemic cases of angina gangrenosa described by Fothergill, Huxham, &c., were probably nothing else. And without directly rejecting the possibility of the complication of a gangrenous angina, it is reasonable to suppose that before the works of M. Bretonneau, many cases of diphtherite were thus designated. But croup is an uncommon complication of scarlatina, neither MM. Biett nor Bretonneau have observed it.

Scarlatina when very intense is almost always accompanied with inflammation, whether of the brain, thoracic viscera, or of the gastro-intestinal mucous membranes. Oftentimes all the great viscera appear to be simultaneously affected, and nature, weighed down by the severity of the disease, soon sinks.

The partial gangrene which supervenes in certain cases, announces considerable obstruction in the circulation.

We often observe, after scarlatina, abscesses in the tonsils, bronchitis, ophthalmia, otitis with deafness, inflammation of the parotid, inflammation of the testicles in adults, and engorgements of the submaxillary and inguinal glands in children. It is sometimes followed by a state of alarming debility. But the result most to be dreaded in convalescence from this disease, is acute anasarca, and the serous effusions which may take place into the several splanchnic cavities. The anasarca may be partial or general. It becomes developed eight or ten days after the disappearance of the exantheme, particularly when the latter has been very extensive. It is remarked that this phenomenon is more frequent and more serious in children than in adults; during winter than summer, and that the impression of cold and moist air exercised great influence on its developement. The precursory signs are sadness, a state of depression and langour, loss of sleep and of appetite; the pulse becomes frequent and concentrated; the skin hot; the urine is scanty, and deposits a sediment. The œdema commences at the eye-lids, then it attacks the entire face, and it is soon observed on the lower extremities; it may seize the entire body. Its duration is from six to twelve days; it is not attended with any danger when confined to the subcutaneous cellular tissue. Diarrhœa, and some other symptoms of gastro-intestinal irritation, may complicate it. In some rare cases, rapid effusions take place into different serous cavities, and death may take place in a very short space of time.

Necropsy.—In persons who have died of scarlatina, the skin generally presents broad spots of a livid red colour, which are seated in the surface of the cutis; sometimes, on the contrary, it presents no trace of the eruption; but, as happens with all inflamed tissues, putrefaction of this membrane very soon takes place. The mouth, nasal fossæ, pharynx, and even the trachea, often present some redness, and on their surface a greyish pulpy matter, in greater or less quantity. In the majority of cases, there is found a well-marked injection in the brain, and in the vessels which transverse its surface. Sometimes the lungs are healthy, sometimes they are gorged with blood and easily torn; in some cases their tissue is very dense, as it were cornified, of a bright red colour, and not easily torn. The mucous membrane of the stomach and intestines presents, in general, a little redness, sometimes even a peculiar violet colour, but most frequently no appreciable lesion, even in cases where diarrhœa has been one of the prevailing symptoms.

Causes.—An unknown contagious principle propagates scarlatina; infants and adolescents are much more frequently attacked with it than adults; it attacks the same individual but once, and out of two thousand cases, Willan has not seen a single instance of its re-appearance. In some epidemics it seems that the specific cause may, under certain uncommon circumstances, develope the general symptoms without the eruption, or the eruption without the general symptoms.

Scarlatina is not restricted to any season in particular; it is seen to prevail epidemically in any season, but particularly in autumn, after heavy rains followed by great heat. The situation of certain places, in vallies, in the midst of woods, and in general everything which tends to interfere with the free circulation of the air, seems to predispose to the developement of this disease. Lastly, it is to be noted, that persons who have had scarlatina may communicate this disease during the entire period of desquamation.

It would even appear, that it is chiefly at this time that the contagion is most active.

Diagnosis.—We shall avoid confounding scarlatina with measles, by recollecting that in the former the eruption usually appears in twenty-four hours, dating from the symptom of the invasion. The extent of the raspberry tint of this eruption, the nature of the symptoms of irritation of the mucous membranes, which, in scarlatina, chiefly affects the pharynx, will prevent any mistake.

In *roseola* there often exists a well-marked angina; but the eruption never presents broad patches like that of scarlatina; the tint is not the same; finally, in roseola, the duration is short, and the course often irregular.

Prognosis.—Scarlatina, when simple, is in general a disease of little danger, though more dangerous than measles. Its prognosis is more unfavourable for the two last varieties Lastly, it is much more alarming if it attack women who are pregnant, or who have lately been delivered, or if it be complicated with other more serious diseases.

Treatment.—When the disease is slight attention to hygiene, and the simplest sort of antiphlogistic treatment is all that is necessary; moderate temperature, strict regimen, cool, mucilaginous, and acidulated drinks, either with lemon-juice or hydrochloric acid, or any other acid (for this latter does not seem to possess any specific property, as has been stated), emollient gargles, possessing slightly detersive properties, are the means to be employed. The constipation which may exist at the commencement is to be treated by simple enemas or aperients.

It is not necessary to administer emetics at the onset; the nausea and vomiting rather indicate gastric irritation than any saburral disturbance of the prima via.

To these means, which are sufficient for scarlatina simplex, it will be necessary to add others of a more active kind, in the case of scarlatina anginosa and mangial, particularly if there exist symptoms of inflammation of one or more internal organs. In these circumstances blood-letting is by all means indicated. One or more applications of leeches to the anterior part of the neck, when the angina is severe, produce marked relief, especially in the case of swelling of the cervical and sub-maxillary glands; the same may be said of local bleeding over the epigastrium, when there exists nausea or obstinate vomiting, accompanied with pain in this region. General bleeding, ordinarily useless in scarlatina simplex, may be advantageously employed when the disease assumes a serious character in young persons, and in robust and vigorous adults; in these cases, one or more large bleedings at the commencement, may prevent or mitigate any unpleasant occurrences. In scarlatina maligna, where the course is very rapid, and, when in the space of a few hours, the symptoms have assumed a very serious character, we must have recourse at once to this means; for if once the congestion is established in the different organs, it becomes much more difficult, and often impossible, to relieve it. At a more advanced period of the disease we must not expect much benefit from blood-letting, which, if then employed, even when it appeared fully indicated, has often appeared useless, and even injurious. Lastly, blood-letting is principally applicable when there exists inflammation of one or more important organs; thus, we may apply leeches to the neck, or to the mastoid processes, when there are symptoms of cerebral congestion, and we must have recourse to it early.

In the case of *angine pultacée*, it is useful to employ accidulated gargles, and what is still better, albuminous gargles; but in the plastic variety (angine couenneusie) we must act with vigour, and instantly modify that peculiar inflammation, by touching the diphtheric spots with hydrochloric acid, or nitrate of silver, &c. In all these cases there is no time to be lost, and there are numerous instances of the fatal termination of this alarming form of angina, which has been entirely mistaken, or discovered only when it was too late.

Laxatives and purgatives are at least useless in the scarlatina simplex, which pursues a regular course; but when there exist symptoms of cerebral or pulmonary congestion, they may be employed boldly, conjointly with bleeding.

Their use is again useful when the an-

gina is very intense. In their administration we should not attach too much importance to the redness of the tongue, recollecting that this redness, oftentimes of a bright red colour, and similar to that of the skin, is a symptom of the disease. Often again, if the signs of gastric irritation are well marked, it will be right to employ them in the form of lavement.

Emetics are indicated only when it becomes necessary to free the pharynx from the matters which obstruct it, a circumstance which principally occurs in children.

Warm baths are often very useful in the decline of the eruption, especially in cases of bad complication, or else where the eruption has disappeared spontaneously. Cold effusion, which has been employed in France, has been employed with advantage in England by distinguished practitioners. This treatment, which has, without reason, been looked on as dangerous, has been employed with success in several epidemics of scarlatina, particularly when the eruption has attained its greatest height. It generally diminishes the heat of skin, the frequency of the pulse, and all the other symptoms. It must be confessed, that, in France, these effusions are very much dreaded. In the most simple cases, it will be quite sufficient to apply a sponge, soaked in cold water, or in vinegar and water, to different parts of the body, more particularly to the forehead, face, and forearms. Some pathologists have objected to the use of this remedy, that it might favour the developement of anasarca, in consequence no doubt of their recollecting that this effect was generally produced by the impression of cold air. This reasoning does not appear to us correct; for the influence of cold in the inflammatory stage of scarlatina should not produce the same effect as in convalescence. Besides how far can we compare these two influences?

The use of sinapisms, blisters, and other irritating applications, must be restricted, in general, to those cases where it becomes necessary to establish a revulsion. The application of blisters to the fore part of the neck, in scarlatina with very intense angina, augments the irritation of the skin without removing the internal inflammation; we have occasionally seen gangrene produced by them.

The convalescence requires much hygienic care, and a frequent use of the warm bath. In case of obstinate constipation, if there were no contra-indication, gentle laxatives might be administered. The patient should avoid exposure to cold air, and all irregularities in diet. When anasarca supervenes, it must be combated by rest, strict regimen, warm diaphoretic drinks; if there be much fever, diarrhœa, gastric symptoms, leeches should be applied round the anus or to the epigastrium. Vapour baths might also be advantageously employed in the treatment of anasarca.

As a preservative against scarlatina, after removal from all intercourse with persons affected with it, belladonna has been proposed; and it has been employed with success in several epidemics in Germany and Switzerland. M. Biett has seen this disease prevail epidemically in a high valley of Switzerland, and keep clear, almost without any exception, of all the children to whom belladonna had been given. We should not hesitate then to have recourse to it, in whatever situation we might be, every time that scarlatina should seem to be epidemic.

The tincture is the most convenient preparation, and the form in which it seems to act with most efficacy. We give, as a common dose, six drops of it per day, to children of from eight to ten years of age; it is needless to add that the dose should be increased or diminished progressively, according to the age of the individuals. The use of it should be continued for ten or twelve days. It was clearly ascertained, that in the small number of individuals not preserved, the scarlatina was always simple, benign, and of short duration.

Lastly, there is still another preservation which seems to have been employed with advantage, namely, a combination of the golden sulphuret of antimony with calomel. The dose for children of from two to four years of age, should be from a sixth to an eighth of a grain of calomel, united to an equal quantity of the golden sulphuret of antimony, and mixed with a little sugar or magnesia; and this should be repeated three or four times a day.

LECTURES ON SURGERY

By John Hunter, F.R.S.

Of the state of the Blood in Inflammation.

It is reasonable to suppose that the blood is affected in the same manner with the constitution, and that disease has nearly the same effect on it that it has on

the body, because the same living principle runs through the whole. We find this to be really the case; for till the disease has affected the constitution the blood continues the same as before; but as the constitution becomes affected the blood also becomes affected, and undergoes changes which are probably owing to contiguous sympathy between the vessels and the blood. So that we shall find that the changes in the blood are often as expressive of disease as in any other part of the body. When the action of the solids is of the inflammatory kind, or, what is perhaps the same thing, when there is too great action of the solids, the blood under such a disease more readily admits of a separation of its component parts; the red particles subside more to the bottom of the coagulum, and the coagulation of the lymph, though more slow, is firmer; the upper part of the coagulum being of an opake white, in which state the blood is said to be sizy. It is not easy to say whether this change in the blood is not the first produced, and that the constitutional is not an effect of the change. I have before said that I can conceive the death of the blood to take place independently of the solids, and it appears to me that the diseased state of the blood is capable of coming on as suddenly as the corresponding state of the solids.

A man received a stab in the abdomen. I saw him a little time after the accident, when there was no degree of fever or constitutional affection, but he complained of considerable pain; I therefore took away some blood from him, which was entirely in the natural state: in about a quarter of an hour constitutional disturbances came on, and the blood appeared very sizy.

Whether the disposition for inflammation and the change produced in the blood arise from a real increase of animal life, or whether it is only an increase of the disposition to act with the power that the machine is already in possession of, is not easily determined; but it appears certain that is either the one or the other. However, some circumstances incline me to suspect that it is the last, because we often have inflammation when the powers are but weak, where there appears to be only an exertion of very weak powers, arising from some irritation produced. This appears to be equally the case in local inflammation and inflammatory fever, or the symptomatic fever. On the other hand, there are some reasons for thinking that it may be a real increase of animal life, for women who are breeding and who are in perfect health, yet have sizy blood; and this is the case with all animals in a similar situation. Now it would appear necessary for an animal, when put into a situation where greater powers are wanted, that these powers should be increased. In breeding females there is a process going on which, though natural, is uncommon, and which requires a greater quantity of power than usual; therefore we have greater powers produced.

If these observations are just, the blood should not be inflammatory blood, but blood whose powers of life are increased.

On the other hand, where there is great debility in the solids, where the powers of preservation are less, and therefore action weak, where the body must therefore have a tendency to dissolution, we find the very reverse of the former appearance in the blood; there is no distinct separation, but the whole mass continues mixed. This effect takes place in those who die instantaneously, and I suspect that the blood dies first, and instantaneously.

When the pulse is quick and hard, and has a kind of vibratory thrill, we generally have sizy blood. This may arise from fever, or such inflammation, &c., as affects the constitution or the vital parts, these being diseased, so as to keep up a constitutional irritation, which will always be an attending symptom.

But when we have neither a quick nor hard pulse, but rather small, no visible fever nor inflammation, but perhaps some strange and undetermined symptom, such as pain, which is moveable, sometimes in one place and sometimes in another, yet seeming to impede no natural function, we shall nevertheless, on bleeding, find the blood sizy, as happened in a gentleman who had severe pain shifting about, with a small slow pulse: he was blooded, and the blood found sizy. After the bleeding the pulse became fuller and harder, and did so after every bleeding, which, on account of this circumstance and the continuance of the pains, was repeated several times. Something like this is observable when an oppressed pulse becomes liberated by bleeding; but what was remarkable here was its increasing in hardness. We may even have the blood contract so strongly in these cases as to cup. So that the pulse and the appearance of the blood do not always agree with one another.

The manner in which inflammation begins is generally from a point. It afterwards spreads from this in proportion to the violence and the disposition of the surrounding parts. This is the case in accidents; the accident is limited, but the inflammation arising from it is not: it is most violent in the first point and gets weaker and weaker as it spreads from this until it is lost insensibly in the surrouding parts. This extension is owing to sympathy; and hence, according to the susceptibility of sympathy will be the spreading; and from the difference of disposition to sympathy will result great differences as to the diffusion of inflammation: the more healthy the less the sympathy.

Swelling of the parts in inflammation, like the inflammation itself, is greatest in the middle, and gradually lessens from that till it is lost in the surrounding parts. It is owing to the extravasation of coagulable lymph and some serum, the serum being squeezed out as the coagulable lymph thickens, and is deposited around the inflamed part, causing œdema, which is less in proportion as the parts are healthy.

Of the colour of inflamed parts.—The colour of an inflamed part is visibly changed from the natural hue, whatever it was, to red. This red is of various hues, according to the nature of the inflammation; if healthy, of a pure scarlet red; if less healthy, the colour is rather more of a purple, and so on till it shall be of a blueish purple.

This increase of red would appear to arise from two causes; first, dilatation of the vessels, by which a greater quantity of blood is sent into those vessels which naturally admit serum or lymph (an example of which we have in the conjunctiva of the eye when inflamed); and, secondly, the formation of new vessels in the extravasated uniting coagulable lymph. From which circumstance there is a greater quantity of blood in the part than in a natural state, according to that law of the natural œconomy, that where a part has more to do than to support itself, red blood is thrown into it in larger quantities.

The true inflammatory colour is scarlet, that colour which the blood has in the arteries; hence we should suppose that the arteries were chiefly dilated, or if the veins are equally distended, that the blood undergoes no change in such an inflammation in the passage from the arteries into the veins, which last I think most probably the case.

Heat of the inflamed part.—The inflamed part is hotter than common; but this most obvious in the skin, from its being a part most disposed to carry these sensations to the brain. Heat, I imagine, is a sign of strength and power in the constitution, though it may often arise from increased action in weak constitutions or weakened parts. It is an immediate action, while cold is the reverse, and often arises from a diminished action of strong parts. It has not been considered whether an animal has this power equally in every part of his body, though from what is generally advanced on this subject, it is probable that it exists in every part. Nevertheless, I am inclined to suspect that there is a principal source of heat, though I do not think with many that this source is in the blood, but rather that this is affected by the source of the blood being near to the source of heat.

That this principle resides in the stomach is probable; at least of this I am certain, that affections of the stomach will produce either heat or cold. Eructations often give a sensation of heat, but whether this is increased heat, or only a sensation, it is difficult to say. Certain substances taken into the stomach produce a glow. Certain affections of the mind also produce a glow. This would appear to contradict my opinion, but I suspect that the stomach sympathizes with the mind.

We find that inflamed parts become hotter; but let us see how far the increase goes. From all the observations I have made, I do not find that a local inflammation can produce local heat above that which is natural to the animal; and when in parts whose natural heat is inferior to that which is at the source of the circulation, it does not rise so high. A man had the tunica vaginalis laid open for the cure of hydrocele: I introduced a thermometer into the wound, and placed in contact with the testicle, and it stood at 90°; by night it had risen to 98¾°, a rise of 8¾°; but this is not greater than the heat of the blood at the source of the circulation. A wound was made in the belly of a dog, and the bulb of the thermometer immediately applied to the diaphragm, which gave 101°, and did not increase above that. Another dog's rectum gave 102°, and when inflamed very much, which it was by injecting a solution of corrosive sublimate, the heat was not increased a degree. The rectum of an ass, 98°, was injected with a strong infusion of mustard and ginger several times repeated, but without increasing

the heat at all, nor did a strong solution of corrosive sublimate have this effect; at last a much stronger one was injected, which brought on a very violent inflammation, but the heat was only increased to 100°. A similar experiment was made with nearly the same result on the vagina of the same ass, and in no stage of this wound did it raise the thermometer above 100°. A wound was made in the belly of the same ass, and an injection of a strong solution of common salt thrown into the belly, which produced violent inflammation, and even symptomatic fever; yet the heat of the part was very little altered. From all which observations and experiments I do not find that a local inflammation can increase local heat above the natural heat of the animal; and when in parts where the natural heat is inferior to that at the source of the circulation, it does not rise even so high. Yet, that in some instances the heat of parts may be increased beyond its natural degree in those parts which have the greatest natural heat, is certain, from the following experiment: the bulb of the thermometer being held in the stream flowing from the abdomen of a man tapped for dropsy, raised the mercury to 104°. In most of the above experiments there seemed a difference of 1° between the heat at night and in the morning, and this difference seems to exist in the natural state of the body.

I suspect that the blood has an ultimate standard of heat in itself when in health, and that nothing can increase that heat but some universal or constitutional affection, and that the whole power of local inflammation is only to increase it a little in the part, but cannot bring it above the stated heat of the constitution, nor even to it in parts far from the source.

Of Cold.—The production of cold certainly is an operation which the more perfect animals have a power of performing

I suspect that coldness in disease arises from weakness of the whole constitution, joined with a peculiar mode of action at the time. That universal or constitutional cold arises from the stomach is evident, for whenever we are made sick universal coldness takes place. This is best proved by producing sickness in animals that we can kill while under the influence of the affection of the stomach. I threw three grains of emetic tartar into the stomach of a bitch, and repeated the experiment with a grain more: she vomited and strained very hard, and brought off a good deal of froth, that is, mucus, from the stomach, mixed with air in coming up. I opened her body, and, contrary to what we generally observe, I found the intestines, liver, and heart not warm. I have known people who had affection of the stomach say that they had plainly a feeling of coldness in their belly. I knew a gentleman who said, whenever he threw wind off his stomach it felt cold to his hand.

Affections of the mind also produce general coldness, but such effects arise from the sympathy of the stomach with the mind, producing there such a sensation as we mean by the expression "turning the stomach with sickness:" the sensation proceeds to the shoulders, which, with the rest of the body, are put into motion by what we term shuddering.

Of pain in Inflamed Parts.—The immediate cause of sensation is an alteration in the natural position of the solids, arising either from violent action or mechanical or chemical effects, joined with its being produced in a given time; for this alteration may be produced so slowly as not to keep pace with sensation, as in many indolent tumours; or, on the other hand, this alteration in the natural position of the parts may be so quick as to exceed sensation.

Pain is not the same in all the stages of the inflammation. In the adhesive stage it is generally but inconsiderable, especially if it is to go no further, and is perhaps more a heavy than an acute pain. But when the inflammation is passing from the adhesive to the suppurative, the parts are undergoing greater change, and the pain gets more and more acute until it becomes very considerable and becomes pulsatory, being increased during the dilatation of the arteries. The nerves, too, acquire a degree of irritability which renders them much more susceptible of impression than in a natural state. When suppuration has taken place, the pain in some degree subsides; however, as ulceration begins, it in some degree keeps up the pain, and this more or less according to the quickness of the ulceration. The pain attending ulceration gives more the feeling of soreness.

Of the Subsidence of Inflammation.—Whatever disposition it is which produces inflammation, and whatever the actions are which are produced by this disposition, yet when the disposition arises either from the constitution or part, it can be removed, and of course the actions raised in consequence of it cease.

If the disposition for inflammation has taken place, and the vessels, which are the active parts, should have dilated thoroughly, they will allow the blood to enter them, so that the part shall look red; but no hardness or fullness shall be observed, and the whole will subside before adhesions have taken place: or if inflammation is gone so far as to produce swelling, which is the adhesive state of the disease, yet by certain methods it can be assuaged, and suppuration be prevented from taking place, and then the parts will fall back into their natural state, which is called resolution. And as the first symptom of inflammation is pain, the first symptom of resolution is the cessation of pain.

Why an inflammation of any kind should cease after it is once begun is very difficult to explain, or even to form an idea of, unless it is on the principle of what I call custom that the parts adapt themselves in time to their present situation; and therefore, in order to keep up inflammation, it is necessary that the cause should increase in proportion as the parts become reconciled to their present circumstances. But this will not account for their returning to their original state when this increased irritation ceases. We may suppose that the removal of the original cause is sufficient to stop the progress of inflammation; and when stopped, the parts cannot easily remain in the inflamed state, but by their own efforts begin to restore themselves to health, like a spring which is bent by a weight, but the moment the weight is removed the spring returns to its former state.

Restoration of injured parts.—All alterations in the animal frame arise from a disposition to act, and these preternatual actions, in consequence of injuries, may be caused,—1st, by a disposition to restoration, in consequence of injuries, which is the most simple; 2nd, by a disposition of necessity, as thickening of parts, ulceration, &c., which is rather more compounded; 3rd, by disease, which is the most complicated. There are a great many cases requiring the assistance of a surgeon but which cannot be strictly called disease, but are injuries done to the body. In disease there is a disposition to wrong action, which goes on until the disposition is worn out, or is put a stop to by remedies; but the actions in consequence of accident are widely different, for here, by reason of the stimulus of imperfection in the injured part, a disposition to restoration is excited, and action, different from the former, comes on. In disease the restoration to health is produced by a prevention of the continuance of diseased action; in injuries, or alteration of structure by violence, something is required different from the ordinary and natural actions, which will differ in some respects according to the nature of the violence and of the part; and this alteration is of the most simple nature, being the action in consequence of a disposition to restoration, and consequently, if it requires any assistance from art, it is of the most simple kind. The affections from accidents may be divided into two kinds, those which take place in sound parts, and those in parts before diseased. The first I shall only treat of now. Accidents, then, may be divided into two kinds; first, those which do not communicate externally, as bruises, sprains, ruptured tendons, simple fractures, &c.; secondly, those which have also an external communication, as compound fractures, wounds, &c.; yet these may be, and often are, brought under the first head. Bruises, which have destroyed the life of a part, might be considered as forming a third head. The first class, when in a simple state, requires a most simple treatment; but they may be so complicated as to require our utmost exertion. The most simple of these is the bruise, when the continuity of parts is not broken through; here the parts have nothing to do but recover themselves. The rupture of a small vessel is next, the blood being effused into the cellular membrane; but the vessel must not be in a part of any consequence to life, or the extravasation may kill, as in the arteries of the brain. The cure in this case will be next in simplicity, the vessel being closed by the contraction of its muscular coats, and the union effected by means of coagulable lymph, and the extravasated blood being taken up by absorbents. The differences in these cases will arise from the magnitude of the injury and the nature of the injured parts. Some accidents of the first class, as fractures, will require the aid of a surgeon to restore the parts to their natural situation, and then nature falls to work and completes the business. Sometimes the quantity of blood extravasated is so large as to prevent nature from going through these processes directly, and forms a tumour called an ecchymosis. Ecchymosis may be said to be of two kinds; one is where the blood coagulates; the other is where it does not. That which coagulates commonly subsides gradually,

from the blood being absorbed, and gives but little trouble, which is likewise the case sometimes with those in which the blood does not coagulate, though not generally. I have seen where a small wound has led to the cavity containing the coagulum, which not being meddled with, the sides of the cavity have gradually contracted, and have as gradually squeezed out the coagulum.

A woman fell with the labium pudendi on the edge of a pail. I found a very considerable tumour, which I thought was of blood; there was evidently a fluctuation. I bled her, and ordered a poultice, but did not open it, as I thought the presence of the extravasated blood might serve to stop the orifice of the vessel. In a little time the tumour burst, with a small opening, and on examining with a probe I found the coagulum filling a space the size of a goose's egg. The cavity grew less and less, but always kept exactly filled with coagulated blood; and thus it continued diminishing until the orifice healed. Thus the blood being allowed to remain in the cavity, and not acting there as an extraneous body, nor even allowing the stimulus of an imperfect cavity or inflamed surface to contract all rouud the blood until had disappeared. Now what would have been the consequence if I had followed the old method of laying open the tumour, scooping out the blood and dressing the internal surface with turpentine? I should have had a sore of the whole extent of the tumour, and given considerably more trouble both to the patient and to myself.

The second species of ecchymosis, or that where the blood does not coagulate, does not always terminate so well as the former. It has often the appearance of an encysted tumour, but from being the immediate consequence of some accident to the part its nature is understood The cause of this blood not coagulating must arise, I conceive, from some peculiar mode of action of the vessels arising from the injury, for I apprehend that in such cases the blood dies as it is extravasated, or in the act of extravasation, like the menses. This species of ecchymosis happens very commonly to children in birth under the scalp. In such cases nothing should be done but to wait with patience, and the whole will be absorbed. In many cases the accident has been so violent as to deaden the cellular membrane under the skin, or as to produce inflammation in the surrounding parts; these sometimes resolve, but they are seldom allowed to do so, for surgeons are led to open them early, from seeing the inflammation and feeling fluctuation, two strong enticements to use the lancet when all circumstances are not well attended to. But in such cases I should wait until I saw the signs of suppuration, viz., thinning of the skin over the matter and pointing of the contents, which are the only true marks of the formation of matter and of its approaching the skin.

Sometimes ecchymosis are removed by pressure, which without this would remain. Parts cannot bear pressure, so that the extravasated blood being pressed against the sides of the cavity, the absorbent vessels are under the necessity of absorbing it.

When ecchymoses are not absorbed, but suppurate, abscesses are formed, which must be treated as abscesses in common, only waiting with a little more patience than when wholly the consequence of inflammation. In many of those cases of accident not only the skin shall be deadened, in consequence of which it will slough and leave a sore, but often the skin shall preserve its living powers, and only the cellular membrane underneath shall be deadened and slough, and produce an abscess, which was not at first expected. In cases where the skin in one part is killed by a blow, and the cellular membrane in another part, while the skin over it remains sound, the deadened skin will come off, granulate, and heal kindly; but then inflammation shall take place, perhaps, an inch or two from it, where the cellular membrane was deadened, and an abscess shall be produced.

If these injuries are not very great, little effect will be produced on the sensitive principle, no sympathy or irritation taking place; but sometimes the accident will, by its irritation, produce another action of the parts, causing inflammation, the end of which is either adhesion of the divided parts, or suppuration for getting rid of the substances become extraneous. The most simple accident may be attended with such circumstances as will prevent the most simple process of nature from taking place; such, for instance, as the magnitude of the vessel ruptured, or a fractured rib wounding the lungs, &c.

The second division I made, was where wounds communicate externally.— These are subject to greater variety than the former, yet often admit of the same mode of cure. A wound may be either simple or compound. The simple, which

is what I mean to speak of now, is a solution of continuity in part, which must be made with a cutting instrument. In such cases a number of vessels are always divided, blood is effused, and the cells of the cellular membrane exposed, as well as other internal parts. The former class required only rest, but in these there is a necessity for replacing the divided parts. The present class admit of both a natural and an artificial cure. By the natural is ment union by the first intention; when this cannot be obtained, a new bond of union takes place—adhesive inflammation; and if this is lost, a third mode—granulation. In that by art we have to imitate the natural, we are to bring the divided surfaces into contact; the living extravasated blood, being then retained and coagulating, unites them; the mouths of the vessels shut, and the remaining blood is absorbed: the red globules are indeed absorbed, and only the coagulable lymph remaining becomes the bond of union. This is an imitation of nature; but surfaces cannot always be brought to unite in this manner, and the blood in some parts loses its living principle, and then it become a source of irritation, exciting inflammation, which is the case sometimes in simple fractures, and which I shall call, for distinction's sake, simple compound fractures.

The best time of replacing the divided parts is perhaps during the time that the extravasation continues, but it may also be done when the discharge of coagulable lymph in the adhesive or first stage of inflammation takes place. Sometimes the inflammation runs so high as to get into the suppurative stage; the extravasated fluids may lose their living principle, and become a stimulus exciting inflammation.

By adhesive inflammation different parts of the body may be united to another by coming into contact; but the most extraordinary union is that of removing parts from one body and uniting them to another. Here is the testicle of a cock, separated from that animal, and put, through a wound made for that purpose, into the belly of a hen; which mode of turning hens into cocks is much such an improvement, for its utility, as that of Dean Swift when he proposed to obtain a breed of sheep without wool. The hen was afterwards killed, and the testicle was found adhering to the intestines, as may be seen in this preparation, where the parts are preserved. Here is another preparation, in which the spur of a cock has been inserted into the comb of another; and here a human tooth, inserted into the same part, and united by means of vessels, which you see injected, from one to the other. These living bodies thus applied to each other produce adhesive, not suppurative inflammation. In the same manner, the eggs of one animal laid in the flesh of another do not excite suppurative inflammation. This would not be the case if the inserted body did not contain the principle of life, for the part would run into suppurative inflammation, as would be the case with a pea so introduced. While the guinea-worm is endowed with the living principle it gives but little trouble; yet if killed, it gives the stimulus of an extraneous body, which produces suppuration through its whole length.

In this preparation you see a maggot deposited, just below the skin, on the back of a reindeer: here the first stage of inflammation took place only; coagulable lymph was poured out, which has formed a chamber in which the insect resided. A similar power is observable in vegetables. Here is an oak-leaf, which I picked up in my garden; you observe on it seven or eight protuberances, exactly circular and uniform. These have been formed by the insertion of the eggs of an insect into the leaf; and I cannot but think the process would have been different if any substance not possessed of the vital principle had been inserted. It is on this principle of union by the first intention, that the union of parts by suture has been recommended, which has been found the best practice where it can be done. The dry suture in superficial wounds answers very well, the quilled is sometimes useful, and the interrupted is very often useful. The two last are properly called sutures. In many cases it is improper to keep the surfaces together, as when the wound as been attended with considerable contusion, which generally occasions sloughing of the parts. When much blood is extravasated, suppuration becomes necessary, in consequence of the blood acting like any other extraneous body; but when laceration only is present, union by the first intention may take place, especially when on the head, and over other superficial bones, as Mr. Cline has observed. The machine is not at all disturbed by this most simple operation; there being perhaps even no local action except the contraction of the vessels, the union being performed by the blood only.

DESCRIPTION OF A REMARKABLE SPECIMEN OF URINARY CALCULUS:

TO WHICH ARE ADDED,

Some Remarks on the Structure and Form of Urinary Calculi.

By Dr. HODGKIN.

The specimens of calculus which I am about to describe, were taken, after death, from the much thickened bladder, of a boy about two years of age: they were nearly of equal size. The larger was about as big as a pigeon's egg, and nearly of the same shape; but rather longer, and not quite so broad: they were of a whitish colour, like many calculi composed of the phosphates.

Instead of presenting the hardness and resistance of solid bodies composed of earthy matter, they possess, on the surface at least, a degree of softness and elasticity, as if covered with a fleshy layer; a circumstance which explains the uncertainty of the evidence of calculus existing in the bladder, when the little patient was sounded, on suspicion of that being the case. Besides this peculiarity in the texture of the exterior layer of these calculi, the material, of which the surface was composed, exhibited a slight degree of translucence, not unlike that of some blighted acephalocyst membranes. These unusual characters induced, at first, some doubt respecting the nature of these bodies. A section made through one of them showed that they, in part, consisted of an opaque white substance, having an earthy texture, arranged in concentric but fragile layers. Two or three thin layers, consisting of a material precisely similar to that of which the external coating of the calculi was composed, were situated between the layers possessing the earthy character. Although the earthy layers were so brittle as to be crushed by the act of making the section, the fragments were so completely retained in their relative situations by the tenacity of the membranous layers, that the two portions into which the calculus was divided were able to retain their form and cohesion. The resemblance which the membranous layers bore to the membranes of acephalocyst hydatids was such as to induce an idea, in the minds of some who examined them, that such hydatids had really been concerned in the production of these calculi. I am, however, disposed to adopt a different explanation: 1st Because it is inconsistent with the nature of acephalocysts, either to exist in the bladder, except when accidentally admitted into it through a preturnatural opening from some other situation, or to be formed as an investment to any foreign body; and, 2dly. Because, if I am not mistaken, a more plausible explanation may be offered. Preparation No. 878, in the Museum of Guy's Hospital, is a specimen of fibrin, passed with the urine from the bladder of a lad who was in the habit of passing what appeared, when recent, a milky fluid, very slightly tinged with blood, giving it very much the appearance of some specimens of chyle. It also resembled chyle in spontaneously coagulating, like blood; and forming a mass of crassamentum, moulded to the form of the vessel in which it stood. The preparation in the Museum is a specimen of one of these coagula. I am inclined to believe that the little patient who produced the specimen of calculi which I have described, must, at times, in consequence of the derangement of his kidneys or bladder, have produced urine having somewhat of the character which had become constant in the lad who furnished the specimen No. 878; and that a nucleus existing in the bladder at the time became invested with coagulated fibrin, as a stick does when agitated in recently drawn blood;—that when the character of the urine again changed, the disposition of the phosphates took place, and inclosed the fibrinous layer. The repetition of these occurrences appears sufficiently to account for the production of these calculi, and to be strictly analogous to the process by which other alternating calculi are formed. The sight of this section immediately suggested an explanation of the production of a peculiar appearance which I had noticed in one of the sections of calculi preserved in our collection, and which had hitherto seemed not very easy to account for.

The calculus in question was composed of concentric layers of very different degrees of density; some being firm and compact, and others so loose and friable as to afford a very feeble support to the denser layers. The peculiarity to which I refer, consisted in one of these layers having been broken into fragments, which, though very much disturbed as respects their relative position, still continued to surround the nucleus; and, being inclosed

by other unbroken layers, concurred to form one solid calculus. The interruptions and irregularities in the broken layer, produce an appearance resembling, on a small scale, the interruptions sometimes seen in the sections of a stratified country. The difficulty had been, to account for the rupture of the compact layer having taken place, without the fragments having become detached and separated from each other in the bladder: whereas it is evident that they must have remained, not only in approximation to each other, but have admitted of little or no motion amongst themselves; seeing that the layers of soft phosphates have been deposited upon them without disturbance. This difficulty seems to be satisfactorily solved, if we admit the idea, that the firm layer was inclosed in a membranous layer, similar to those in the calculi before described, at the time when the force which ruptured it was applied. This closely investing layer of a flexible material, by retaining its cohesion whilst that of the layer within it was destroyed, would necessarily retain the fragments in juxta position, although they had been somewhat displaced. The disappearance of other proofs of the existence of such a layer does not present any insuperable difficulty, since we might conclude, *à priori*, that such a layer, composed of water with a little animal matter, unsupported by organization, would soon be decomposed, and that its place would be partially occupied by depositions from the urine which the loose texture of the calculus would allow it to imbibe.

The inspection of a large number of urinary calculi has at different times suggested to me some ideas respecting their varieties of form and structure; which it may not be amiss for me here to offer, in addition to those contained in the preceding remarks.

It is evident, in many instances, that the particles separated or precipitated from the urine to form calculi assume a crystalline character; and the mode in which this crystallization takes place around a small nucleus materially influences the structural character, and the form of the calculus. The structure is radiated, and the form more or less rounded. Even the evident marks of increase of superposition by layers does not destroy this radiating character; and the surface is often roughened by manifest crystallization.

Such specimens of calculi bear considerable analogy to certain zeolites, and to some specimens of radiated quartz. The cystic oxide affords one of the best specimens of decidedly crystalline calculi. The state of purity in which this substance generally exists is, perhaps, one of the circumstances the most favourable to the production of a distinct crystalline character. Some of the phosphates appear to come next to the cystic oxide, in presenting this character. Calculi, consisting of oxalate of lime, frequently present evident traces of crystallization, but, for the most part, under certain modifications, which render it necessary for me to speak of them separately.

In many instances, the molecules which unite in the composition of urinary calculi do not possess a perceptible crystalline form; and the resulting substance is what mineralogists would call massive, with no other indication of structural arrangement than more or less distinct traces of superposition in concentric layers. Calculi of this class present a great variety in their mechanical structure, as well as in their chemical composition. In some, there appears to be a slow and uniform deposition, like that of the well-known incrustations of carbonate of lime formed in the baths of San Fillippo, near Radicofani. Such calculi possess a firmness of texture, which admits of a very fair polish. In other cases, the precipitated particles are so loosely coherent, that the substance of which they are formed seldom admits of section without crumbling to pieces. There is considerable variety in calculi of this description; some possessing a granular texture, which might be compared to a coarse sort of sandstone; whilst in others it is soft and earthy, like some of the softest specimens of chalk or tufa. The lamellar arrangement is very differently perceptible in different specimens of this kind of calculus: in some it is strongly marked, and the calculi, which are easily crushed, separate in shell-like flakes; whilst others, in which the arragement is less conspicuous, break up almost indifferently in all directions.

As forming an intermediate link between calculi possessing a distinct crystalline character, and those in which the texture may rather be regarded as amorphous or massive. I mention those calculi which present a mammillated surface, and which, on close inspection of a section or fracture, appear to have their several lamellæ made up of short fibres, at right angles to the plain of the lamellæ. These are often an assemblage of acicular

crystals: indeed, the crystalline form is sometimes evident upon the surface. This form of calculus is most frequent and remarkable in those specimens which are composed wholly or chiefly of oxalate of lime; and the name of mulberry calculus is doubtless derived from the resemblance to the surface of a mulberry, which the assemblage of round elevations or mammillæ produces; whilst the dark colour common to these calculi tends to render the similarity more striking. This arrangement is not, however, peculiar to calculi composed of oxalate of lime. It may be seen though less frequently and less remarkably, in calculi wholly or principally composed of lithic acid. This modification of crystalline arrangement is exhibited in various minerals: it is not very uncommon in hæmatites and other oxides of iron, in black oxides of manganese, and in magnesian limestone. The mammillated elevations are sometimes elongated in a very considerable and remarkable manner; and although they all seem to radiate from a common centre, they differ most essentially from acicular crystals, which are also frequently seen shooting from a common centre. The elongated mammillæ do not take so straight a course; and instead of terminating by regular angular facets, they are blunt and rounded, and often present smaller mammilated elevations upon their surface. The only calculi, I believe, which present this extension of the mammillated form are those composed of oxalate of lime: in which it sometimes proceeds so far, as to produce a perfectly stellate figure. The most remarkable and beautiful specimen of this kind which I have seen, was shown me by my friend Professor Mussey, of New Hanover, in the United States: who has, I believe, published a description of it, accompanied with a figure. The radii in this specimen must have been at least half an inch in length, and not more than the tenth or twelfth of an inch in diameter: they were united by a very small central nucleus. The whole constituted a star of such delicate form, that it was truly surprising that it should have remained unbroken in the bladder.

The shape of some calculi is evidently influenced by that of the body which constituted the nucleus upon which the material composing the calculus is deposited. We may see this in the incrustation which, in the course of a few days, envelopes the catheter left in the bladder. A needle had found its way into the bladder, and become the nucleus of a long and slender calculus. Sir A. Cooper used, in his lectures, to mention a similar example, in which the nucleus was a silver tooth-pick, which had been introduced into the bladder.

The intestinal calculi occasionally found in horses and other inferior animals sometimes exhibit the influence of the nucleus, in modifying the form of a concretion. In the Museum of Comparative Anatomy, there is a specimen of this kind, presented by Luke Howard. It has the form of a very oblate spheroid, evidently dependent on the nucleus, which, in this instance, was the metallic disc of a button.

Urinary calculi not unfrequently owe their form to that of the cavity in which they are lodged. The most striking examples of this are seen in nephritic calculi, which, in some specimens, are completely moulded to the form of the pelvis and infundibula. A similar influence is occasionally exhibited in biliary calculi; sometimes a single one, and sometimes two, completely filling the gall-bladder, and assuming its form, and even extending, to a short distance, into the ductus cysticus.—See Specimens in the Museum, No. 1978, and 1987.

Although the form of urinary calculi is modified by the nucleus upon which the calculous matter is deposited, and partly by the form of the cavity in which they are lodged, these are not the only causes by which their figure is affected. The greater thickness of the deposited layers, at a particular part of the calculus, frequently alters the form, by occasioning a more rapid increase of size in one direction than in another. The thickest and most rapid deposit appears to take place at that part of the calculus which is exposed to the largest bulk of the urine. It is consequently, towards the fundus of the bladder that the calculus receives its deepest, but, at the same time, its most fragile layers. This fact is most remarkably seen in sections of calculi composed of the crystallized phosphates. This unequal increase of calculi in different directions, is a complete proof that they do not change their position in the bladder nearly so much as might have been expected. Even calculi of small size sometimes exhibit this unequal disposition in a very remarkable manner. It is occasionally seen in lithic acid calculi; although, in general, calculi of this description are composed of very uniform layers. The fact, that the loose, soft, and white calculi, composed principally of

the phosphates, most frequently possess this inequality, tends to confirm a remark, already made by Dr. Marcet and Baron Heurteloup, that these phosphatic calculi depend as much on the diseased secretion of the bladder itself as on any peculiarity in the urine, as transmitted from the kidneys.* The compressed and flattened form of many calculi cannot, in my opinion, be very satisfactorily accounted for. Baron Heurteloup ascribes it, in some instances, to the original nucleus; but in the lithic-acid calculi, which principally assume this form, the nucleus is generally so small, that the addition of numerous layers of uniform thickness would necessarily tend to produce a sphere. We are therefore obliged to admit, that these flat calculi must maintain, if they do not originally receive, their form by more copious deposition at their circumference. Something may, perhaps, be ascribed to the circumference being always ready to receive accessions of deposit, whilst of the flat sides one only is exposed at a time.

It might not unreasonably have been supposed that the urine descending from the kidneys would deposit its salts upon that part of the calculus which corresponds with the orifices of the ureters; just as incrustations of carbonate of lime accumulate where water charged with that salt is constantly poured out; or, to offer a still closer analogy, as the molar teeth become encrusted with tartar opposite to the duct of the parotid gland. Were such a deposit to take place, it is probable the misery of patients labouring under vesical calculus would be greatly increased; since processes from the calculus would be formed, which would not merely irritate a very sensible part of the bladder, the neighbourhood of its neck, but the passage of the urine from the kidneys to the bladder, might, in some instances, be seriously interfered with. When we see that the urine, as it is secreted in the kidney, is liable to deposit calculous matter of different kinds, before it has been concentrated by retention in the bladder, as is shown by the formation of renal calculi, this exemption is the more remarkable, and the cause of it not very evident.

When two or more urinary calculi exist in the bladder—and the remark will apply to a plurality of calculi in other cavities also—their form is modified by their mutual contact, and their opposed surfaces sometimes appear worn by attrition. The surface thus produced is not always flat: the one may be convex, the other concave, so as to represent a part of a ball-and-socket joint. If we make a section through such calculi, we may observe that the appearance of attrition is, in some degree, fallacious; for we may clearly perceive, that even on the opposed surfaces, deposition has been proceeding, and that the number of layers has been increasing on that part of the calculus, but that they have been thin and compact compared with those situated on other parts of the calculus. When a considerable number of calculi exist in the bladder, they are sometimes rounded by mutual contact, like the pebbles on a beach: in other cases, they assume a cubical or polyhedral figure, but more frequently the former. This disposition is strikingly seen in a collection of a hundred and forty-two calculi, removed, at one operation, from the urinary bladder by Sir A. Cooper. This, however, is not the only mode in which a cubical figure may be given to urinary calculi. It sometimes happens, that the elongated processes which I have described as projecting from the surface of the calculi, wholly or principally composed of oxalate of lime, are not of equal length on all parts of the calculus. Hence, instead of giving to the general outline of the calculus a spherical figure, they produce one which is angular: and, if I may judge from two specimens in Guy's collection, the figure is apt to approach very nearly to the cube. This is strikingly remarkable in the specimen No. 2138, which has a very regular cubical figure of about two inches in diameter. The section clearly shews that this calculus was originally spherical; and that it assumed its present form by the disproportionate increase at eight op-

* The production of pseudo-membranous layers, and of earthy salts, by the mucous membrane of the bladder, when in a state of disease, in the human subject, appears to be not altogether without analogy to the normal and abnormal productions of a part of the urino-genital mucous membrane in birds and reptiles: the normal productions being the shell and some of the humours of the ovum. The abnormal are eggs without yolks; and masses composed of concentric layers, of a more or less membranous character. The texture and thickness of these layers is by no means uniform. (See Preparations in Museum of Comparative Anatomy.)

posite points, corresponding to the angles of the cube—the intervening parts of the surface having received such additions as to produce six sides; which though presenting the ordinary inequalities of mulberry calculi, obviously tend to produce a flat surface.

Some calculi, which towards their circumference are evidently composed of nearly parallel layers, and therefore seem to have been formed by superposition upon a nucleus, are, nevertheless, found to be hollow at the centre. One of this description has, externally, rather an irregular figure and surface; but the asperities are rounded off; there is an appearance of minute crystallization on some parts of the surface. The section of this calculus is of a pale, yellowish brown colour; the texture is, generally, close and compact. Towards the circumference the parallel layers are very evident. The centre of the calculus is hollow; and the cavity it presents has a very irregular surface, suggesting the idea of a soft mass having being dried, leaving the residuum fissured. The parallel layers, towards the internal surface, are interrupted, as if broken by this process after their deposition. I imagine such calculi must have been formed upon a nucleus almost entirely composed of coagulated blood or fibrin, which becomes but imperfectly penetrated with the urinary salts which compose a calculus; and that, although absolute desiccation does not take place, they nevertheless have their solid particles brought together in close approximation and cohesion. Fissures are thus produced, as in the drying of starch; whilst the external portion of the calculus, being originally deposited in a firm compact form, and consisting chiefly of calculous matter, remains unchanged. Such calculi may therefore be compared to the masses of Lias found in the London blue clay, which are of a *nodulous* figure, and of a uniform texture externally; whilst internally they present numerous irregular crystalline veins; which veins are evidently produced by the filling up of internal fissures, produced in the manner above described; namely, the aggregation and cohesion of the solid particles of a once soft mass. They bear, however, a still closer resemblance, in size and figure at least, to some small nodules of carbonate of lime which were found imbedded in a seam of clay, and which were hollow internally.

When a stone in the bladder has acquired a very large size, so that for a length of time it must have filled the organ, and rendered it impossible for the urine to collect to any notable quantity, it generally happens that the calculus loses the pyriform shape which the model of the distended bladder naturally presents, and assumes a figure which may be compared to that of an hour-glass; except that the contraction does not take place in the middle, so as to divide the calculus into equal portions; the depression is likewise comparatively slight, and its direction, instead of being vertical to the action of the calculus, is considerably oblique. The degree of obliquity is nearly the same in all the specimens in which I have observed this peculiarity. Such uniformity evidently points to some cause inherent in the bladder itself; but I confess that I have not been able satisfactorily to account for it. I am not aware of any partial superiority in the contractile fibrous coat of the bladder, in the situation and direction required to produce such a depression. I have thought it possible that the ureters might, in some way or other, be connected with it; either directly, by their action on the bladder, or indirectly, by the stream of fluid which they are pouring into it. As I have never examined a bladder containing such a a calculus, I am without facts, either for the confirmation or refutation of this idea. —*Guy's Hospital Reports.*

CASES AND OBSERVATIONS

ILLUSTRATIVE OF

DIAGNOSIS

WHERE

TUMOURS ARE SITUATED AT THE BASIS

OF

THE BRAIN;

OR WHERE

Other parts of the Brain and Spinal Cord suffer Lesion from Disease.

By Dr. BRIGHT.

In a former number we inserted the commencement of this able paper and now resume it.

Nightingale Wells, aged 43, was admitted, under my care into Guy's Hospital, October, 22, 1834.

It appeared, that in the year 1817, being then in the army, he received a wound from the bursting of a gun, by

which his cheek-bone was much injured, and from that time the sense hearing became very defective in the left ear; but no other ill consequences were suspected till about eighteen months ago, when an offensive discharge took place from the left ear, which, after continuing for eight months, suddenly stopped about Christmas last. This was quickly followed by a pain across the forehead, and a sense of weight towards the back of the head. About four months ago, the vision of the left eye became imperfect; and in another month the right eye was likewise affected.

At the time of his admission, the vision of both eyes had, for the last month, been so defective, that he was unable to find his way into the street. During the last six weeks, he had been attacked, three or four times almost every day, with a convulsive agitation, chiefly affecting the left side; and he stated that his memory had become very imperfect respecting recent circumstances, but was more retentive of those of earlier date. His pulse was variable in strength and frequency, generally about 96. He remained under my care nearly three months, during which time a seton was kept open in his neck: his bowels were freely acted upon by various purgatives; a grain of calomel was, for some time, given three times a day: leeches were several times applied to the temples, and behind the ears: the head was shaved, and a cold embrocation applied. Tartrate of antimony was rubbed into the scalp. All, however, proved, as has been fully anticipated, of little or no avail. The chief variations which took place, during the time he remained, were the occasional recurrence of very severe headaches. He once or twice fell to the ground, in fits of giddiness; and was often unable to move, from what he called the heaviness of the head. He had occasional difficulty in passing his urine; and his bowels were costive. On the 13th of January, he left the Hospital, being at that time totally blind; and never afterwards could distinguish light from darkness. He was quite deaf in the left ear, and the hearing of the right was at times much affected. He had then the perfect use of his limbs; and was in the habit of being led out for walks to a considerable distance. I was informed by Mr. Thomas Griffith, who, with Mr. Dewsnap, saw him occasionally, and was kind enough to obtain for me what information he could, that this state continued till about the middle of the summer of the same year (1835), when he was suddenly attacked one day while walking in the garden, and fell insensible. "When he recovered," says Mr. Griffith, "he was hemiplegic on the right side, and the mouth was drawn to the left. On the side affected, there was total loss of sensation. He recovered, in some degree, sensation, and the power of motion in the arm and leg; but the effort to use either was always accompanied with violent shaking. He could not stand without support. He at all times had the power of retaining and voiding his fæces and urine: the bowels were very torpid, requiring the daily use of full doses of aperient medicine to procure relief. He was subject to convulsive attacks; which came on sometimes three times, sometimes only once a day, and sometimes with an intermission of a day or two. His mind was at times childish, but his reason was not gone: his sense of taste was entirely destroyed: his hearing varied, being sometimes very good, at others imperfect. Though I had not seen him for many months, he immediately recognized me by my voice. This was abuot two months before his death: he then articulated with much difficulty: he uttered his words suddenly, and after a prolonged effort. His tongue was drawn forcibly to the roof of his mouth; and in the effort to speak, there was apparently great difficulty to depress the lower jaw: he frequently, however, gaped, and yawned to the full extent. It appeared that the muscles of the right side of the jaw had in a degree regained their power; for the distortion, when I saw him, was in no great degree; sensation, however, was entirely lost on this side of the face. He was a man of irritable temper, and passionate; but I did not observe that he was lately more so than usual." For a considerable time before his death, his arms were so paralyzed, that he could not feed himself; and for the last ten weeks, he could not leave his bed on account of the paralyzed state of his legs.

He died at his residence at Hammersmith, on the 23th of October 1836; and on the 25th Mr. Griffith conducted the examination of the body, in the presence of Mr. Dewsnap, Mr. Bowling, and myself; when the following appearances were observed.

SECTO CADAVERIS.—Raising the calvaria, the dura mater appeared tense, but not remarkably vascular. Two or three large glandulæ Pacchioni stood out on its surface, by the side of the longitudinal sinus, like little fungoid excrescences.

When the dura mater was removed, the convolutions appeared flattened, from the the profusion of fluid in the ventricles The arachnoid was not very vascular, and there was no serous effusion.

On cutting into the substance of the brain, there were decided marks of congestion internally, and very distinct mottling. The corpus callosum was a little raised. The ventricles were distended to three times their natural size, by limpid fluid: the parietes and septum lucidum were firm: the foramen of Monro was large and open: one long vessel ran meandering along the under edge of the plexus choroides: the plexus itself was exsanguine.

The optic nerves were remarkably small, hard, and of a yellow colour, very different from the pure white by which they are usually distinguished. Their section was oval and compressed. The infundibulum was rather thicker, and of firmer consistence than natural.

Beneath the tentorium, a tumor, as large as a chestnut, was found on the left side, apparently attached by a peduncle to the petrous portion of the temporal bone, pushing aside the tuber annulare and the left hemisphere of the cerebellum, compressing the medulla oblongata, and pushing the fifth nerve upwards. This was found to be a firm dark tumor, the section of which was mottled with grumous blood; and it altogether bore the appearance of a fungoid growth, arising from the cancellated structure of the bone, but closely attached to the anterior portion of the cerebellum. The cancelli of the bone were soft, containing a puriform fluid. The tympanum was quite gone; and the ear contained some purulent matter.

The other viscera, both of the abdomen and chest, were natural; except, that in the lower part of the thorax, on the left side, an empyema of some standing was discovered, with a thick layer of lymph covering the pleura, and circumscribing the disease.

The two cases which I have now detailed afford as many points of similiarity as are often found, or indeed as we can well expect to meet with, when we consider the varying combinations which the human frame constantly presents.

In both cases, we have individuals, little past the prime of life, dying in consequence of tumours similarly situated within the skull; and, as they are both in other respects healthy, their symptoms had suffered no important complications from the co-existence of other diseases. In both, we have reason to connect the aggravation, and probably the existence of the disease with the exposures and accidents of military service. In both, the disease has been marked by its gradual progress; has first shown itself by affections of the senses; and then slowly produced paralysis of motion or sensation in various parts, affecting the intellect little, until an advanced period of the disease, and probably not before it had led to extensive serous effusion into the ventricles.

The symptoms may be more specifically stated; as, an almost total loss of sight, total loss of hearing in one ear, and to a great extent in both, gradual paralysis of the extremities, slight and temporary affection of the sphincters, great diminution in the sense of taste, and a protracted death from sensorial oppression.

In these two cases, the left ear lost its sensibility not much less than twenty years before death; in the one, from the concussion of a cannon; in the other, after a severe wound in the face, and, doubtless, concussion of the temporal bone. What predisposing influence was exercised by the violence inflicted at the time, in either case, it is impossible to say; but the circumstance should not be lost sight of, in the record of facts.

In both cases, the vision was impaired and destroyed, even before the hearing of the right ear; and it is not easy to account for this affection of the sight. I am sorry that I cannot find any observation after death on the condition of the optic nerves in the first case; and I therefore suppose that no remarkable change was observable in their appearance, or that it was passed over unobserved. In the second case, a very obvious alteration presented itself, the nerves being small, hard, and dark-coloured, with a yellow tint, and, to all appearance, unfitted for the discharge of their natural function; but how this change was induced, whether by pressure on any part of their course, or by interruption to the circulation through their substance, or by the irritation of contguous parts, or in consequence of the serous effusion taking place in the ventricles, I dont pretend to say. The loss of vision, in both cases, leads us to suppose that it forms an important part of the consecutive history of the disease. The loss of sight in the left eye took place, in each, rather more than two years before death; and

the loss of vision in the right eye followed very shortly after that in the left. The left ear, though its power was diminished to a very great extent in both cases, and was entirely lost in the first, retained its faculty of receiving impressions longer than either of the eyes.

The situation of the organic mischief, which might be said, in both cases, to encroach upon the mechanism of the right ear, and which made pressure on the auditory nerve of that side, afforded sufficient explanation of the destruction of its functions; but it is probably to the pressure communicated, through the pons Varolii, to the auditory nerve on the opposite side, as the tumors enlarged, that we may ascribe the slow diminution of sense in the left ear.

With regard to the sense of taste, it seems to have been impaired, in each case, as the disease gradually advanced; and neither is any specific notice taken of it, till a few months before death. This is one of the most peculiar and interesting symptoms, because one of the least frequently noticed in cases of cerebral lesion; and I have no doubt that it arose from pressure made by the tumor on the fifth pair of nerves, which gives origin to the gustatory branch; for, in both cases, the fifth pair suffered the most obvious and decided displacement and compression. The obtuseness of the sense displayed itself in the total want of preference with respect to articles taken into the mouth, as observed in the first case, so that the most nauseous medicines were taken with the same indifference as the most grateful beverages; and, in the second case, the inability to distinguish flavours was freely admited.

The impaired functions of the senses, more particularly of the sight and hearing, preceded, by a considerable time, any important loss of power in the voluntary muscles, or any diminution in the common sensibility: in regard to which, some slight want of correspondence is observable in the two cases, more particularly as to the spasmodic or convulsive action which occasionally displayed itself in the second case, but was not present in the first. In both cases, however, something analogous to fits of congestive apoplexy occurred, as the irritation and embarrassment of the brain gradually proceeded; and doubtless the serous affection and consequent changes in the ventricles had a considerable share, both in impairing the muscular power, and in inducing that feebleness and oppression of the intellect which formed no part of the disease in its earlier stages.

In connection with the foregoing subject, it is instructive to trace the effects of lesion, as they occur in the different portions descending along the course of the spine; and the opportunities of doing this are frequently afforded us, both by disease, and as the result of accident: and a very interesting paper on this subject, which was read last May, before the Royal Medical and Chirurgical Society, by Sir B. Brodie, is published in the present volume of their valuable Transactions. Cases of an analogous kind are very frequently occuring in the practice of the physician, where disease has produced partial paralysis, more or less traceable to local derangement. In one case, which was under my care in the hospital within a few moths, a female, somewhat advanced in age, suffered paralysis of the glosso-pharangeal and laryngeal nerves, so that she could with great difficulty swallow, and was quite speechless; and, being unable to write, expressed herself entirely by signs; while she had no other symptom of paralysis. A man, who had evident disease in the superior cervical vertebræ, had lost his power of articulating, except in a whisper; while, at the same time, the lower extremities were paralyzed, so that he was unable to walk; and, although he recovered the use of his extremities in a very great degree, under the use of setons, he left the hospital still unable to speak above a whisper.

The London Medical

AND

Surgical Journal.

Saturday, September 9th, 1837.

THE UNIVERSITY HOSPITAL.

It ought to be distinctly understood that the additional fee which it is intended by the Gower Street Joint Stock Company to be extorted from those students who wish to attend the North London Hospital, but who at the same time decline becoming pupils of the Lectures in the London University, is solely intended

as a bonus to the lecturers themselves; it having been *settled by the disinterested professors* that only the former rate of charges for attendance at the Hospital should be *appropriated to the support of its inmates*, whilst the additional £10 were to be divided amongst the physicians and surgeons, according to their mutual arrangements.

The EMINENT PROFESSORS, after several years *gratuitous* labour in the HOSPITAL, had for some time most bitterly complained that such labour had not brought with it a suitable pecuniary remuneration, and, consistent with the LIBERAL principles of the company, they were impelled maturely to deliberate in what manner a portion of their hitherto *charitable labours* could be converted to fill their own purses. After much serious reflection, and numerous private meetings, which the very *interesting* nature of the subject demanded, the PROFESSORS came to the decided and unanimous opinion, "that it would be inexpedient, at least for the present moment, to appropriate any of the funds of the charity to their personal advantages;" whilst at the same time every one of them was fully satisfied that "an additional sum might *judiciously* be levied upon those students who entered to their hospital," for *no other purpose*, and with *no other recommendation* than the SMALLNESS of the fee, compared at least with the enormous honorarium demanded by the *regular corruptionists*.

It is not to be wondered at, that the servants of the Joint Stock Company should have felt *humiliated* at their North London Hospital being made use of by a great mass of students merely for *economical* purposes, as was too evident from the same students not condescending to attend the lectures of the CELEBRATED PROFESSORS. They therefore deserve no small degree of credit for contriving a new regulation, which will compel those students who had anticipated the advantage of so *economical* an establishment as the North London Hospital, either to "fork-out" £10 to the medical and surgical cormorants of the charity, or submit to attend the soporific discourses delivered at the University College.

The Middlesex Hospital, which is in the immediate neighbourhood, and which had only been relinquished by the economical student on account of the largeness of the fee, now offers no barrier; and we augur that few of the extra ten pound extortions will come within the reach of the iron grasp of the carnivorous bipeds of the North London Menagerie.

It will be seen, however, by the bill of fare which contains the terms of the company for the ensuing session, that it has admirably been contrived to secure a larger fee for attendance on the lectures of their school than is demanded by any other establishment in the metropolis; so that under the hypocritical garb of a *cheap hospital* these LIBERALS expect to enveigle the unsuspecting and unguarded youth, and extort a sum of money for his medical education which he never had contemplated, and which he might never have summed up until he availed himself of the able assistance and arithmetical pen of their erudite secretary.

In adopting this system of recommanding themselves to the public, the Joint Stock Company of Gower-street, have only imitated the ordinary usages of a certain class of tradesmen in this metropolis, who, by advertisements and placards, pretend to sell apparently good commodities at a "reduced price;" but the unfortunate purchaser, when he comes to examine the account carefully, is astounded to find that *items* are ingeniously introduced which he never anticipated he would have to pay for.

So that what between the placarded super-excellence and cheapness of commodities, of only ordinary goodness, and the artful introduction of items, the innocent purchaser finds he has "paid considerably dearer for his whistle" than had he, in the first instance, purchased from a tradesman of consistency and respectability.

PRIVATE MEDICAL INSTRUCTION—GRINDING.

It is the intention of the Editors of this Journal to offer to their readers a full and particular account of the system of GRINDING, not only in this metropolis but also in Dublin and Edinburgh.

The materials for this novel and no less useful purpose, have been carefully collected and arranged from authentic sources—so that they will form a full and comprehensive vade-mecum of every kind of knowledge which is required from candidates for diplomas and degrees at the examinations of the different constituted authorities of the three kingdoms. The system of grinding may be viewed in many different aspects, all of which are equally interesting to the student, the examiner, and likewise to the lecturer himself. Perhaps there is no subject which could come under discussion in which the interests of three parties are so interwoven and dependant upon each other. It is essentially necessary that every encouragement should be held up to the student of medicine, otherwise both the examiners and teachers would not reap the same harvest. A grinder, therefore, fills an important chasm, by infusing the required quantity of knowledge in a certain time, he becomes the organ of satisfying the conscience of the examiner, and at the ame time of giving eclat to the teacher. The student is equally delighted with the functions of the grinder, acquiring his honours with so little intellectual exertion; and he is the more readily prompted to the large disbursements, perhaps the most essential ingredient in the triturating system, from the consideration of having been compelled by the legalised authorities to have extorted from his pocket comparatively larger sums for knowledge, often promised, but not always received.

The grinding system is pursued in London upon various principles, and by individuals some of whom fill high and important professional positions, and the operation is performed at various prices, and on very different terms. There are several eminent professors, especially some distinguished persons of the King's and University Colleges, St. Bartholomew's and Guy's Hospitals, the Westminster, St. George's, and the Middlesex, who all devote themselves conscientiously to perform the duties of the MILL. The next are those connected with private schools, whose time being less valuable, they are able to devote themselves more zealously to the discharge of their duties, as triturators. And there is still another class, better known by the title of BACK MOLARES, who keep themselves aloof from all connexion with teachers and examiners, who devote themselves entirely to the welfare of the student, which individuals have, as might be anticipated, the largest classes, and the most extended reputation.

The expences of grinding, by these several classes, are very different, though all expect a honorarium, it is comparatively small to the fees extorted from students by the recognized lecturers. The first class, such as King's and University College-men, *expect* ten guineas, though a less sum is frequently taken, which pre-

vents an application being made to the second division or class of grinders. The second class require five guineas to perfect each candidate, but like the first class, often reduce their price, and take three guineas, as they consider it their bounden duty to prevent as many students as possible making application to the third class. The third class of grinders or the MOLARES, aware of the difficulties with which they have to contend, and to prevent the frequent attempts which have been made by each of the other two classes to form a monopoly, perform their task at the moderate sum of three guineas, and occasionally even a less sum has been taken; but the greatest inducement which they hold out to the student is to indulge him during his hours of active intellectual exertion, with an occasional recreation of pipes and porter. Such is the accommodation afforded by the different grades of private instructors in this metropolis.

THE MEDICAL JURIST.

We have long endeavoured to impress our coutemporaries with the absolute necessity and vast importance of that science which is very improperly termed Medical Jurisprudence in this country. We have elsewhere given a history of Medical Police, State Medicine, and Public Hygiology, as well as of Forensic, Legal, Judiciary or Judicial Medicine, or what is termed Medical Jurisprudence.* It is scarcely necessary to remark that medical evidence may protect or destroy reputation, liberty, and even life. A series of articles on the subject cannot fail to be interesting and, as the science of State and Judicial Medicine exists amongst us, instructive to many readers. We shall therefore insert a series of papers upon this branch of Medical Science.

* Manual of Medical Jurisprudence and State Medicine, &c., &c. 1836. Second edition. Sherwood and Co.

INSANITY.

Mental Alienation, or Insanity is of four kinds:—1. Mania. 2. Monomania. 3. Dementia. 4. Amentia. The medical jurist should be able to indicate the leading symptoms, and most judicious treatment of each variety; and also to detect feigned cases of insanity, and to prevent real lunatics being treated as criminals. A wide field of speculation is opened to him by this interesting subject. Some of the questions he will have to decide are, how to distinguish the disease, and to prove a man insane, if he has real lucid intervals; what period of life is most liable to insanity; and what diseases are most liable to be confounded with it?

1. *Mania.*—Mania has periods of exacerbation and decline like other diseases. Pinel recommends that regular accounts of these periods should be entered in the case-books, instead of the oddities and extravagancies of the patients. He would divide maniacs into three classes, according as they exhibited the exacerbation, or acmé of the disease, its decline or convalescence.

At the commencement of the disease the sensations are very different in different persons. I knew a female, (says Dr. Traill,) who slept in the open air, although snow was on the ground, and yet complained of heat in the chest and abdomen. There is often great watchfulness, sleep being sometimes not enjoyed for a very long time. The patients sometimes bolt their food; but at others under anorexia, and act on a determination to starve themselves to death. In the latter case you must force liquid food upon them. Be attended by a strong force of keepers, for if you have only one or two the patient will resist. Lay him on his back; let the nostrils be closed, and the mouth forced open by an instrument inserted between the teeth, and pour down the fluid from a double-spouted vessel. The sexual appetite is sometimes lost, but at other times it is outrageous.

After the maniacal access has passed the patient sometimes wakes up as from a dream; perhaps with a loss of consciousness of all that as taken place, though, occasionally, a dislike to certain persons or things may remain. During the fit this dislike is often taken to persons or things before agreeable. Recovery is generally gradual, and the best symptom is a return to the subject of hallucination without being much affected by it, especially if the return be voluntary. In one case

Dr. Traill was examined on a commission of lunacy, where the person appeared quite well. On asking him if he had not been ill-used, he answered—Yes; that he was Lord Ellenborough, and had been deprived of his estate. At the Bicetre, a man, who was about to be discharged, subscribed himself "Jesus Chirst."

It is wrong to think that mania is incurable, and that it always depends on organic lesion of the brain. In old standing cases of insanity, the brain is found much harder than natural. Out of fourteen which were examined in the Liverpool Asylum, one could be rolled, and even kicked, round the room, without being broken. It resembled liver in consistence. If the disease has been of less duration, there may be ramollisement of the brain, but in the generality of cases, there is only increased vascularity.

2. *Momomania.*—In monomania, or melancholy, there is generally increased pride. Dr. Traill had a patient which conceived himself the most perfect of beings. He thought that when he moved the world vibrated; and that his wealth had been confiscated to pay the national debt. He was very harmless, and used to be employed in the kitchen of the asylum peeling potatoes. He said, that, if let out, he must kill several persons, having received a commission from heaven so to do. He is still alive.

The fear of hell is very common. A happy mother suddenly became wretched from this cause; and several times attempted to commit suicide. She was quite coherent on other subjects, and was cured by a change of air and scene. A man who had become insane from drinking, thought one night that God sent an angel to tell him to cut his liver. With a razor he made an incision into his *left* side; opened the descending colon, and ever afterwards had an artificial anus. Dr. Traill told him the message could not have been from God, for He would have known better on which side the liver was. This hastened his return to sanity. I do do not think religion is so frequent a cause of insanity as is generally supposed. Many monomaniacal patients have fears on religious subjects who before their illness were not religious. Ardent spirits send more patients to asylums than all other causes put together.

Some patients have taken their physician aside, and described accurately the hallucinations of their fellow-patients, and have then reminded him, in a whisper, how differently they were to be treated, since *they* were noblemen, and in one case the Deity himself! One gentleman went mad after studying political economy. He wrote a most eloquent letter to Pitt, full of correct views; but concluding with a proposition for stretching land, "as the curriers stretch leather," in order to extend Britain into the Atlantic. I saw another, who had invented a machine for making diamonds, "as fast as peas from a hopper," by compressing the carbonic acid of the atmosphere. He also said he had drawn a picture of the country he passed through, by looking out of the window of the carriage through a telescope; while a pencil fastened to his queu, drew the picture on the opposite side of the carriage. He died imbecile, after squandering his property. There was another patient, who said that a ride in the morning, and a warm palour, with a pack of cards, in the afternoon, were all that life affords. He soon afterwards killed himself. Another gentleman told a friend he was tired of life, and was determined to quit it. His friend requested him to live till Saturday. He promised he would do so till four o'clock. His friend did not visit him till five, and found that the determination had been put in force an hour before. The two last were instances of tedium vitæ. A gentleman determined, that, in order to save his family from perdition, he would send them to heaven before they had committed mortal sin. He made an attempt on his wife's throat; was confined, cured, and afterwards lived happily with his family for two years. The disease then returned; he solicited permission to enter an asylum, and died there. A gentleman told his medical attendant that, during the fit, he felt a strong desire to kill his children, and, being religious, ascribed it to the instigation of the devil.

A pretended madman will seldom escape the examination of medical men; though a crafty lunatic may. It is unfortunate that the trial of Bellingham, for the muder of Mr. Perceval was hastened, for it was thought by some he was insane, and he was once in confinement. Public feeling was much excited against him.

3. *Dementia.*—In this variety of insanity there is a violent transition from different states, and from one thing to another. I have known patients repeat the names of animals, or of inanimate objects, without intermission for hours together. During the French Revolution, a young man saw his father murdered; he lost his speech and his reason, and attended only

to his physical wants. In dementia the judgment is scarcely exercised at all; it is characterised by sudden emotions of joy and grief; extravagant motions of the body; restless activity; a chaos of wild ideas; all transcient and without design.

4. *Amentia.*—This form of insanity, which is also called idiotism, is owing to original malformation of the brain. If congenital, it is not susceptible of cure; but the patient must be kindly treated. Cretinism is a most remarkable kind of amentia, combined with goitre, or bronchocele. The latter is well known in Derbyshire. Dr. Traill had a servant from that part of the country, and, with the exception of the tumor, she was quite healthy. Cretins have generally large deformed heads. Some cannot walk till the period of puberty, and some can perform no voluntary motions but those of deglutition. They have no moral feelings. In some cases the genitals are large, and there is great salacity. If two intermarry their offspring is most helpless. If a cretin marry a healthy woman, the offspring is a cretin in the third degree. Saussure ascribes this disease to the stagnant air of the Alpine valleys. Others attribute the goitre to the use of hard water, which causes excessive glandular secretion.

Accidental idiotism has arisen from blows, the abuse of spirits, venery, &c. It often arises from disappointment. The patient sometimes repeats the same word frequently; perhaps from defect of memory occasionally, but generally from spasm of the muscles under the tongue, as in stammering. By a violent effect this spasmodic affection may sometimes be overcome, as in the case of a patient who could sing if liquorice was offered. Idiots generally fix themselves in a particular part of the ward, and if moved, return to it. One idiot had constantly a lascivious grin on his countenance; said only "yes," or "no," and if moved, or ordered to walk, expressed his anger by a grunt.

Mania from drinking sometimes gradually sinks into idiotism. One maniac was a great babbler of things without connexion. He was getting well apparently, when he fell down in a fit of epilepsy, became an idiot, and died. On examination, a hard tumour was found in the brain, and pus infused under the pia mater. Idiotism, of all the forms of insanity, is most difficult to cure; but Pinel says it is sometimes cured by an access of mania.

Mental alienation, is an alienation of some of the powers of the understanding. Hence the derangement may be of various kinds. The first we shall mention is derangement of sensation. Hence patients often feel great heat in the abdomen, and this leads them to quit their beds, and to prefer the cold floor. High excitement leads to sleeplessness, and to great muscular exertion. But these are not always concomitant symptoms. If the disease has lasted long, there is generally a tendency to stupor. Sometimes an excessive quantity of food or drink is taken. This must be restrained, and not stopped altogether. The barbarity of keeping such patients on very low diet (which Pinel says is sometimes fatal) is now exploded. At the Bicetre, when the whole daily allowance of food was a pound and a half, served at one time, the mortality was sixty-two per cent. After the revolution, the quantity was increased to two pounds, served at twice, together with potage at night. The mortality fell to twelve and a half per cent.; but this was partly owing to other improvements.

Deranged sensations in the generative organs, lead to satyriasis. Women of the most modest habits, fall to a level with prostitutes; they complain of heat in the breasts and uterine region. In males this state leads to self-pollution, and even produces a tendency to worse crimes. Such patients you must seclude and restrain, by means of a strait jacket. Women give vent to their desires, at first only in whispers, but afterwards loudly, and by immodest gestures. After reason is recovered, modesty returns, and generally such persons have no knowledge of what has passed. Sometimes patients eat little or nothing, for fear of poison. One was so sunk in idiotism, that he would not eat unless food was put into his mouth.

Deranged perceptions of sight, are very common in delirium tremens. I knew a retired officer, leading a monotonous life, who used to see puny soldiers descend into the room, through a crack in the ceiling. Another patient who thought he saw in the yard a monkey with its young ones; they were in reality a hen and chickens. On his conceiving that the monkey came into the room, Dr. Traill pretended to catch it, and when the patient saw it in his grasp, without being able feel it, he was cured of the delusion. In delirium tremens bleeding is not good. The best way of administering opium in such cases, is by opiate friction to the arms and legs.

Derangement of memory is very com-

mon, especially in dementia. A lady used to repeat words unconnected with each other for hours together. If her mouth was stopped with the hand, when the latter was removed, she began again with the word with which she left off. I have known idiots frightened on being threatened for a fault; and yet repeat the fault soon afterwards. This was owing to forgetfulness. One lady, who was kept apart from the other patients, in the Liverpool Asylum, on account of her howling, was very anxious to join the rest; but on obtaining her wish, would soon begin to howl again, having forgotten her promise to abstain from it. Sometimes, on the other hand, the powers of the memory are much increased.

One gentleman enjoyed, in the paroxysms, a kind of beatitude—writing poetry and being very malicious. Another filled quires of paper with poetry, little connected, but containing beautiful images. Sometimes a spot on the wall is transformed, in the imagination of patients, into a grinning countenance; a wreath of straw into a crown of diamonds; and a tattered cloak into a robe of royalty. Visions are very common, both by day and by night. One patient said his body was not his own, but belonged to Jane Johnson. Another said that his voice was that of a little man in his belly; another, that the head he wore was not his own, but that of a man who had cut it off; and a third, that he had changed bodies with his doctor, and insisted on feeling my pulse and prescribing.

The moral sense may be perverted, and cases the patient is not amenable to law for his actions. A mother cut off her child's head, and calmly told her husband of it—thinking she had sent her child to heaven. Pinel tells us of a peasant who was frightened into insanity, by a missionary's description of hell. He attempted the life of his wife, and actually killed his two children, and a person who was confined with him. He thought he was appointed to save the world by a "baptism of blood." He was put into the Bicetre for life, and thought he had escaped execution by the interposition of divine power. He then took it into his head that he was "the fourth person in the Trinity." After a confinement of ten years, he was allowed to go into the convalescent ward. He continued well for four years, but he then killed two persons and attempted the life of a third.

The most modest and refined women, have become immodest and obscene in language and gesture; and more so than really loose women,—as if insanity prompted to conduct the most opposite to natural habits. If a gay person becomes suddenly melancholy, there is great danger of insanity, and the first symptom of convalescence will be a return to his natural disposition. If any of the patients in an asylum require more or better food than the rest, they should not be brought to table with the latter; for their companions will be sure to impute it to partiality. If patients will not take sufficient food, you must employ entreaty in the first instance, but if that fail you must force nutritious food upon them.

A young lady, afflicted with monomania, used to put up most fervent prayers for recovery; but yet expressed her conviction, every night, that she should die before morning. At last Dr. Traill laid her a bet of a pair of gloves, that she would be alive at his next visit. Accordingly, when he called again he claimed the bet, which she paid. These gloves he wore at all his subsequent visits, and whenever she began to talk in the old strain, a glance at the gloves silenced her. She gradually ceased to return to the subject, and was ultimately cured.

A man shot himself through the chest. The ball fractured the sternum and scapula, and was taken out behind. In the first instance he fired at his head, but the ball glanced from his forehead. He then discharged a pistol into his mouth, but the ball had fallen out previously. The balls, which are preserved, have the marks of the firing upon them; and when bullets fit tightly, there will also be a ring around their circumference. He appeared to be sinking from the wound in the chest, but suddenly became maniacal, and recovered. Some months afterwards, however, when on his passage to America, after dining cheerfully, he threw himself overboard. He sank immediately, having put cannon balls into his pockets.

The causes of insanity are various. The principal are hereditary disposition, melancholy temperament, various passions, nervous diseases, and injuries of the head.

1. *Hereditary Disposition.*—We know nothing of the nature of this cause, but its reality is not to be disputed. We are not certain, in such cases, that insanity must appear, but there is a predisposition ready to be called forth by any exciting cause. It has been known to pass over one generation and appear in the next. Insanity, when hereditary, most commonly breaks out at puberty, or at the

decline of life, and in females, at the cessation of the menses. In men there are no causes so common as excessive sexual intercourse, and indulgence in spirituous liquors. We cannot assign the proximate cause here, but it is probably some peculiarity in the structure of the brain; for why should not children resemble their parents in the form of the brain, as well as in that of other parts? The number of generations through which features may be transmitted is very great. A nobleman who, in the time of Cromwell, did penance for his gallantries, left behind him, in a village in Scotland, many copies of his remarkable Roman nose, which is still to be seen in his descendants there.

2. *Melancholy temperament.*—The French accuse us of this failing, and allege that melancholy and suicide are most common among us. If they mean *moping* melancholy, the allegation is not true; but if they mean, as Pinel says, the intense pursuit of one idea, it is rather a compliment to our national character. Insanity is sometimes ushered in by serious gravity, a disposition to study, hypochondriasis, and gloomy views of religion. Intensity of devotional feelings may lead to despair; from which there is but a step to suicide or an asylum. Sometimes the last spark of expiring reason, has been hailed by injudicious enthusiasts, as the perfection of religion. This is especially observable among those who delight to paint the Deity in glowing colours; but the most notorious drunkards and debauchees often end in religious ravings. People should also be warned against study of works of fiction, which inflame the imagination, present complicated scenes of distress, and favour a dreamy, indolent existence.

REVIEWS.

A Clinical Treatise on the Endemic Fevers of the West Indies intended as a Guide for the Young Practitioner in those Countries. By J. Evans, Esq., M.R.C.S. London: J. Churchill, 8vo., pp. 309. 1837.

We hope we need not apologise to our readers for giving a third notice of this original and practical work on a class of diseases most formidable in their results, and very imperfectly described by preceding authors. The history of these diseases written by a careful observer will be perused with interest by every medical practitioner. Impressed with this conviction we continue and conclude our review of this valuable work.

The author gives an ample clinical report of the diseases peculiar to the West Indies, and the histories of cases of intermittent neuralgic affections, intermittent inflammations, peritonitis, and simple and inflammatory agues—cases of endemic diseases and fevers. He next describes the pathology of the different organs and tissues, and then "The Seat and Nature of the Endemic Fevers of St. Lucia," their connexion with yellow fever, the history of this last disease, and the different means employed for its treatment. It would be impossible for a weekly journal to give close analytical reviews of practical works of the kind before us, and therefore we must content ourselves with few extracts. We have, however, given sufficient to enable our readers to judge of the merits of the production before us. We shall now append a few important cases and take leave of our author. We need scarcely state after our lengthened extracts, that this work evinces extensive and faithful observation and deserves a place in the library of every medical practitioner resident in the West Indies.

Inermittent Peritonitis.—A. V., aged 25, of a nervo-sanguineous temperament, superficial veins very much developed; native of the West Indies, but has resided until within a few months in France. Plunged into cold water when the body was very much heated, and shortly after eating a copious breakfast; immediately felt a general uneasiness, and vomited his breakfast; he was then seized with colicky pains of the belly, which continued nearly the whole day; in the night these pains became continued, and fever was not long in making its appearance. The following morning I saw him: the patient complains of considerable pain throughout the whole of the abdomen, nausea, violent efforts to vomit, skin hot and dry; no evacuation of the bowels for two days; pulse full, and 100 strokes in a minute; no head-ache; urine high coloured, and small in quantity; the abdomen is very slightly distended, and extremely painful on pressure. V. S. ℥ xvi. statim, castor oil; hot fomentations to the abdomen. Evening; the patient seems nearly well; the skin is nearly moist, the pulse quiet, and the pain in the abdomen gone; he can bear pressure, though a little sensibility still remains; the bowels have not been opened; the castor oil was returned.—

To take calomel, gr. x. to-night, and a black draught early in the morning. 20th. Noon; I have again been sent for, as all the symptoms returned at ten o'clock this morning, after an intermission of twelve hours; skin intensely hot and dry; pulse 108, full and hard; abdomen extremely painful; the weight of the sheet is almost insupportable; vomiting of bilious matter; great thirst. Bowels have been freely opened. I must confess that I feel a great deal of astonishment, as I looked upon the disease as completely vanquished last night, and little dreamed of its return in so severe a form. I considered it a case of peritoneal inflammation, from hyperhemia of this membrane, consequent upon the sudden contriction of the cutaneous capillaries produced by the cold bath. The blood taken away yesterday was very sizy. Bleeding repeated; hot fomentations; barley-water. Evening, blood cupped, buffy. As the patient could not bear the weight of the flannels, his friends put him into a warm bath, which procured some relief; but he is still much in the same state as this morning, and there is now evidently a gastrite superadded; the tongue is red at tip and edges; great thirst; vomiting of bilious matters and mucosities, with effort; frontal head-ache, and dryness of the skin. Hirudines xxx. abdom. During the application of leeches the patient suddenly began to feel relief; the skin became moist, and the symptoms subsided rapidly. To take three grains of quinine every hour. 20th. The patient has passed an excellent night. There has been another intermission, bnt he has not taken any of the quinine; unfortunately his friends have thought proper to judge for themselves, and I was told that "*le sang est trop écheauffé:*" he is now just like a person convalescent. There is a complete apyrexia, pulse soft, 80, skin moist; has perspired freely, and had his linen changed in consequence; but the abdomen is somewhat distended and sensible on pressure, though not much so, nor more than might be expected from the symptoms of yesterday. To take ten grains of quinine immediately, and to have them repeated in half an hour. Noon; all the symptoms returned half an hour after I saw him, and are now as violent as yesterday. To have a warm bath immediately. The disease being decidedly intermittent, I think it injudicious to repeat the bleeding, as we may expect another intermission to night. Nine o'clock, P.M. I have been obliged to repeat the bleediug. The symptoms are more violent than ever; both the peritonitis and gastritis are most acute. Rep. hirudines. 21st. I have been up all night with this poor person. He has been again bled, and placed in a warm bath until fainting was produced, but the symptoms have made an awful advance. Has had one stool, about eight hours since, from the use of a syringe. From midnight until about two o'clock in the morning there was a partial calm, and quinine was administered in a clyster, but was soon returned. Since this period the symptoms have gradually but rapidly increased, and at present, one o'clock, P.M., 22d, he is in the following state: Drooping of the eye-lids, tears escaping on the cheek; extremities cold as ice; chest and abdomen burning hot: the latter distended, and so exceedingly painful as to make the patient scream with agony when moved. He insisted upon having cold water constantly applied, by pouring it from a vessel in which it is kept cool, but cannot support even a linen cloth. Tongue red at edges and tip, dry: pulse rapid and small; perfect consciousness, and aware that the result will be fatal. Rep. hirudines. Mustard to the inside of each thigh; stimulating frictions to the arms and legs. Evening; the friends have requested my opinion, and have begged me to allow them to do what they imagined they were able for the patient, who cannot outlive the night. He died at nine A. M., 23d November. Sect. cad., five hours after death. Body stiff but warm, abdomen meteorized. In cutting through the parietes of the chest and abdomen, the skin, cellular tissue, and muscles were dry: that is, no blood escaped from their divided vessels. About three quarters of a pint of fluid were discovered in the abdominal cavity; this fluid was what has been denominated sero-purulent: that is, serum in which molecules of albumen are suspended, giving it a wheyish appearance. Some of these molecules were of considerable size, resembling shreds of false membrane. The peritoneum covering the abdominal parieties red throughout almost the whole of its extent, and covered with a thin layer of fibrine, adhering in places to its reflections over the intestines, which are inflamed in patches to a great extent. The lower portion of the ilium of a dusky red, friable, and easily lacerated. Rougeur pointillée of the cul de sac of the mucous membrane of the stomach. This organ contained a small quantity of yellowish fluid. All the other organs healthy. Blood has undergone no change; colour-

less clot on the right cavities of the heart.

Gastro-hepatitis sub-acuta.—G., Esq., native of England, some time in St. Lucia, of a nervo-sanguineous temperament, aged about 35, was taken ill two days ago with what he calls slight fever, which has continued ever since, but with a marked evening exacerbation. 2d December, 1833; skin hot, but very moist; pain in head, back, and extremities, but not severe; nausea; thirst; conjunctivæ yellow; urine high coloured, tinging the linen: it is opaque, but there is no sediment; abdomen slightly distended, but no pain on pressing any part of it; tongue yellow, and furred at the back; red at edges and tip; pulse quick, about 90; bitter taste in the mouth; tendency to diarrhœa; tenesmus; stools bilious and slimy. The patient says that just now he is comparatively well, and requests that I will return in the evening. He is anxious to take an emetic, but as I should wish to see the paroxysm uninterrupted or interfered with, I prescribed nothing more than barley-water and a most strict diet. Evening; paroxysm has begun about an hour; skin hot and dry; great thirst; whatever is taken into the stomach, even in the smallest quantity, is immediately rejected, mixed with yellow bile. He is now conscious of slight pain, or rather uneasiness, on pressing the epigastrium and right hypochondrium; head-ache increased, and the tongue more red at the tip; is still furred at the base; pulse upwards of 120; great uneasiness and anxiety from the nausea.—To take three grains of tart. antim. this evening, followed by gr. v. of calomel, and early in the morning castor oil in the juice of sour orange. 3d Dec. The patient is much better, and entirely free from his complaints of yesterday; the eyes are scarcely yellow; the urine clear, and has thrown down a lateritious sediment; tongue quite clean and pale. This patient remained well until the following day, the 4th, when at noon he again had general heat of skin, and quickness of pulse, and some thirst. The symptoms very slight, but still there is a complete state of pyrexia; with slight redness of tongue at the tip. Towards evening diaphoresis and return to health. Quinine gr. iv. ter die. 6th. Has had no return, and is perfectly well.

Remarks.—The symptoms which constitute fever are heat of the skin, quickness of the pulse, and disordered secretions, dependent upon a cause known or unknown. This being premised, we might logically draw the following conclusion:—That these symptoms would bear a just proportion to the severity of the cause, that is, if the cause be a powerful one, the heat of the skin, the quickness of the pulse, and the derangement of the secretions would be very considerable, and *vice versa*. Experience daily proves its fallacy. In some of the most acute forms of gastritis which are to be found in the West Indies, the skin is cold and damp, and the pulse does not exceed eighty or ninety. The rigid inflexibility of truth daily subverts the most plausible arguments and the most subtle theories. Neither heat of skin, nor quickness of the pulse, bear any proportion to the severity of the disease. We daily see cases where the skin is intensely hot, and the pulse 140 pulsations in a minute, which are comparatively mild, and have the most favourable termination. What is meant by the general symptoms it would be difficult to express; they are so numerous, so various, and so different in each case, that it would be quite impossible to form a nomenclature of these diseases founded only upon them, without reference to the seat of the evil. If we study diseases we first ascertain the cause; the effects, or, in other words, the symptoms then become no longer difficult.

In the last four cases we meet with intermittent inflammations of different parts. In the seventh case the inflammation was seated in the parenchyma of the lungs. In the eighth in the fibrous textures of the articulations. In the ninth in the peritoneum; and in the tenth in the mucous membrane of the stomach, duodenum, and biliary canals.

That inflammation properly so called ever observes a purely intermittent type, has been, and still is, doubted by many; and the principal reason offered in defence of this objection is founded upon the treatment which these forms of disease require. But all the subtleties of logic cannot explain away a fact, and diseases similar to those above exist, have existed, and will exist, call them by what names we may. Except the last, I have carefully abstained from introducing any case in which the local inflammation was not marked, and clearly the cause of the general symptoms. These cases do not form a large proportion in the intermittent fevers of St Lucia, I allow; but if we were to examine those of the more usual form, we must still admit the existence of inflammation as a point of departure

On the Nature and Treatment of Diseases of the Heart, with some new Views on the Physiology of the Circulation, By JAMES WARDROP, M.D. to King George IV., Lecturer on Surgery, &c. &c. 8vo., London, 1837. John Churchill.

The author of this work has long since established his reputation as a pathologist by his writings on Fungus Hematodes, on the Morbid Anatomy of the Eye, and as a biographer of Baillie. His work on Anuerism, on "Blood-letting," and his numerous tracts which have appeared in the Transactions of Societies and in periodical Journals during the last twenty-five years, have amply enabled the profession to judge of his practical talents, and on the work now before us will rest his character as a physiologist. He is indeed fully entitled to the appellation of original, being replete with a collection of facts and a chain of reasoning by which he has been able to explain many of the phenomena of the living body which had not even claimed the attention, far less an explanation, by the most celebrated physiologists. If, indeed, the views which Mr. Wardrop has given be correct, and their accuracy can scarcely, we believe, be disputed, a new and no less important field is laid open relating both to the physiology and pathology of the circulation.

The work is divided into two parts, the first of which only has appeared.

We shall allow the author to explain the nature of the work by quoting his preface:—

"The first part of this work contains preliminary observations on the structure and functions of the heart, with which are interspersed some new physiological researches on the circulation.

"The second part will give an account of the diseases of the heart, and those affections will be more especially treated of which are of common occurrence, and which we have the means of alleviating by medical treatmeut,—but comparatively little will be said of those morbid changes which seldom occur or over which the resources of medicine have been found to exercise little control.

"Whilst prosecuting some investigations concerning the diseases of the heart, and more particularly regarding their causes and treatment, the author's attention was directed to certain symptoms with which diseases of that organ are accompauied,—and, in seeking an explanation of them, he was led to reflect on several natural phenomena connected with the circulation of the blood in the heart, and with the function of respiration, but of which no satisfactory explanation could be found, and to some of which even no allusion had been made in physiological writings.

"He was particularly struck with the influence of respiration on the action of the heart, and with the influence of the action of the heart on respiration, as well as with all the modifications of these functions, not only in diseases but likewise during the acts of weeping—sobbing—crying—laughing—in the giddiness experienced in turning round rapidly—in swinging, and in sea sickness.

"His attention was not less arrested when contemplating the influence, which the almost constant movements of the body exercise both on the respiratory and the circulating organs. He was led to inquire how the action of the heart and lungs is increased by violent exercise—how persons can by a process of 'training' acquire the power of using their muscles, until their muscular energy is exhausted, without causing breathlessness or a sense of suffocation—in what the art of diving consists—and finally, how diseases of the heart are caused by violent exertions and by mental excitement.

"Having arrived at the conclusion that these various phenomena are intimately connected with the great function of the circulation of the blood, further observations convinced the author that each of these different acts is employed for performing a specific purpose in the economy—some for increasing and others for diminishing the quantity of blood within the thoracic cavities, according as modifications in the quantity of blood are required, or an adjustment becomes necessary in the different organs for the due performance of their respective functions.

"In pursuing these investigations, the mind was conducted step by step to establish the existence of three important functions—functions connected with the circulation of the blood, which had hitherto been overlooked by physiologists.

First—That the muscles, besides being the active organs of locomotiou, perform the important office of increasing the quantity of arterial as well as of venous blood, within the cavities of the heart.

Secondly—That the lungs regulate the supply of blood to the heart so as to prevent cognestion within the heart's cavities—and

"Thirdly — That the subcutaneous veins performing the office of a reservoir, prevent congestion of blood within the pulmonary vessels.

"By establishing these important functions—of the organs of active motion—of the lungs, and of the subcutaneous veins —several phenomena, both of the respiratory and circulating organs, admit of a satisfactory explanation; and we are enabled to account for some peculiarities in the structure of the vascular system, whilst we are, at the same time, materially assisted in the elucidation of many phenomena, in the diseases both of the circulating and respiratory organs.

"The second part of this work will give an account of the diseases of the heart and their treatment.

"From the supposed dangerous tendency of all diseases of the heart, we might have anticipated that the various affections of that organ would have been carefully investigated, even from a very early period in the history of medicine. But the erroneous impression of the limited powers of medical treatment, as well as of the fatal character of these diseases, would seem to have paralysed, rather than excited inquiry into this most interesting branch of medical science.

"Morgagni, Senac, Baillie, Burns, and others, had contributed much to advance our acquaintance with the pathology of the heart; but the subsequent researches of the French pathologists, more especially those of Corvisart, Laennec, Bertin, Andral, and Bouillaud, by pointing out the means of recognising, during life, those various morbid changes of structure which we had previously been able to detect only after death, materially contributed to the advancement of this department of knowledge. Still however it remains an important desideratum, to discover the means of discriminating diseases of the heart in their earliest stages, and before any of those formidable changes of structure have taken place, which it is not within the powers of medicine to relieve. It is quite evident that such changes of structure must be preceded by a train of phenomena, and by a series of lesser disturbances in the function of the heart, and the detection of these will enable us to apply remedial means, with a probability of achieving the same advantages, as in the treatment of diseases in other organs.

"We may also anticipate a great extension of our knowledge of curative means in the treatment of diseases of the heart, since there is a class of medicines, which, from their specific influence on the organs of the circulation, may be advantageously employed in these various affections.

"Ipecacuanha, as is well known, acts upon the stomach—saline medicines on the small, and aloes on the large intestines —mercury influences the functions of the liver and salivary glands—cantharides and the various balsams operate on the urinary organs—narcotics act on the brain, and some even on particular nerves, as for instance belladonna on those of the iris. In like manner the preparations of antimony, of iron, of lead, and also some vegetable substances, as digitalis, colchium, hellebore, and tobacco, have each a particular influence on the functions of the heart. It is not therefore too much to affirm, that the power of recognising diseases of the heart in their earliest stages, will, combined with the judicious exhibition of these various remedies, afford the means of treating the diseases of that organ as successfully as those of any other diseased viscera."

Our readers will observe that the explanations given of the circulation throughout the body, which simplify many obscure and hitherto unknown phenomena in the animal economy, are calculated to considerably modify and greatly improve practical medicine. The work evinces much originality, mature reflection, strong reasoning powers, and is replete with most important conclusions. It will add to the well-earned fame and high reputation of its distinguished author.

CLINICAL REPORTS.

No. I.

DISEASE OF THE BRAIN.

C. S., a girl, twenty years of age, was brought in insensible from a brothel, whither she had recently come from the country; and where, among other vices, she had been taught to drink. The following particulars were obtained from a girl who accompanied her. She had complained for some days of a pain in the left side of the heart, and yesterday fell off her chair suddenly, without sense or motion. A medical man was not called in till four hours afterwards. He bled her, and administered an aperient powder. No passage, however, had been obtained from the bowels. She now lies in a co-

matose state, with stertorous breathing, cold extremities, and pulse fifty-eight, and very weak. The pupils of the eyes, though much contracted, vary according to the light.

The head was ordered to be shaved immediately, and a blister applied to the scalp, together with twenty leeches to the temples. An enema containing an ounce of oil of turpentine, was directed to be administered immediately, and a drop of croton oil to be placed on the tongue every hour till the bowels should act. The feet to be placed in hot water.

All this was done. Her legs were immersed in very hot water; thirteen of the leeches fastened, and two drops of croton oil were administered. The pulse rose about ten beats in the minute, the pupils dilated a little; and the extremities became warm. She died, however, two hours after admission.

On separating the scalp some effusion of blood was found; owing, probably, to the fall. Very few red points were observed on slicing the brain. The anterior lobes of the cerebrum, adhered firmly to each other, and there was likewise extensive adhesion of the arachnoid membrane to the dura mater, over the middle lobe of the right hemisphere. The left corpus striatum was very soft, and of an unusual red colour towards its outer edge. Both the internal carotids were thickened as to their coats; and the left was hard and obstructed. Serum was found in the left side of the chest, the pleura of which exhibited old adhesions; but the lungs themselves were healthy. Fluid, containing a few flakes of lymph, were also found in the pericardium.

Clinical Remarks by the attending Physician.

When the convolutions of the brain are observed to be flattened, and its substance blanched (as in the present instance,) we generally find considerable effusion into the lateral ventricles. It was not here, however. I expected to find blood effused; but we are often decived in this particular. Only a small quantity of effused fluid was observed; and that was confined to the left ventricle. There seemed to be an extravasation of blood in the sensorium; but I think it was only a projection of the sinus. It was the same in both sides. The mind of the patient does not appear to have been lost immediately after she fell down. The progress of disease in this case was not like that of ramollissement of the brain, for the latter is generally more slow in its progress, going on sometimes even for years. In some cases the disease is local, but generally an extensive part of the brain is involved. The red colour of the left corpus striatum shewed that here we had inflammation in its acute stage. Brain, when softened, is generally yellow or cream-coloured. I think blood is often effused at first, and that the red tint lasts till removed by absorption. Contraction of the limbs is said to occur in ramollissement, but that is only in protracted cases, and is wanting in many even of them. In the present case one side was paralysed, while we had spasms of the other. This is very common, owing (to use an expression not understood) to irregular distribution of the nervous energy. We cannot depend on the previous history of this case. The only premonitory symptom memtioned was head-ache. This, and confusion of thought, sometimes make up the whole of the premonitory symptoms, and sometimes even those are wanting. This patient had led a dissipated life, and had been the subject of repeated inflammatory attacks. When she came in, treatment of a more active kind than that which she receired was out of the question. I did not see her, but I consider her treatment to have been perfectly judicious. Nothing else on earth could have been done for her.

The plan I intend to adopt with our cases is, first, to detail the symptoms; then the conclusion which I draw from them; and, lastly, the measures to be pursued. Any change that may occur during the progress of the case I shall mention; and when it terminates shall notice if our judgment was right, and the treatment successful. We can seldom treat a disease from reasoning, but must act according to the symptoms, and afterwards endeavour to reason on them. In all fatal cases I shall endeavour to have the body examined before you. This often clears up difficulties and doubts, and will sometimes teach us how to treat similar cases. I generally prefer to admit acute cases, and severe chronic cases rather than slight. I am not anxious for monstrosities, but for cases that more commonly occur. Nor shall we expect to find these always agree with Cullen's Nosology, for many anomalies occur. We shall often admit cases we have no hope of curing; and we must therefore expect the deaths to be frequent; and, indeed, we shall admit those in which it is most likely to occur, for the sake of the dissection .

PROFESSORSHIP OF ANATOMY IN TRINITY COLLEGE, DUBLIN.

To the Editor of the Medical and Surgical Journal.

Sir,—Having read in your Journal of the 26th of August an editorial article, in which you assert that you have good authority for stating that Dr. Harrison is most likely to fill the vacant chair of Anatomy in Dublin, and in which, you likewise charge the Board of Trinity College with being governed by political feelings in the choice of their Professors. I think it right to make you or your informant acquainted with the consitution of the Act of Parliament for establishing the School of Physic in Ireland.

The Professorships when vacant, are directed by this act to be advertised three months previous to the election, and declared to be "open to *Protestants* of all Nations," and immediately before the electors (who in the present instance are the Provost and senior Fellows) give their votes, the President of the College of Physicans is to solemnly administer to each the following oath.

I A. B. do swear that I will, to the best of my judgment and opinion, and without *favour*, *partiality*, or *prejudice*, vote for such Candidate for the vacant Professorship as shall appear to me best qualified for the same—So help me God.

To assume therefore that Dr. Harrison or any other person can know how the Members of the Board will vote, until all the Candidates shall be ascertained, and their merits duly considered, is to suppose that the Board would act with "favour, partiality, or prejudice," a supposition that cannot be entertained for a moment, considering the character of the men and the nature of their oath, and one which is contradicted by the conduct of the Board of Trinity College, on all former occasions of election by oath, on which they have been known to act with purity, impartiality, and sound judgement.

I am, Sir,
Your obedient servant,
VINDEX.

APOTHECARIES HALL.

Mr. Johnson has been elected the Master, and Messrs. Malim and Clapton the Wardens of the Company for the ensuing Year. Mr. Upton has been re-elected Secretary.

LITERARY INTELLIGENCE.

In a few days will be published, An ESSAY on PYREXIA, or *Symptomatic Fever;* as illustrative of the Nature of Fever in general. By HENRY CLUTTERBUCK, M. D.

TO CORRESPONDENTS.

Justitia.—Application for the correspondence alluded to, with the House Surgeon, ought to be made to Mr. Richardson personally.

Inquisitor.—The Minutes of the Committee will be published by the Council.

North London Hospital Student.—The lithotriptic preparation is forthcoming, and has been *claimed* as the property of the hospital. The abnormal orifice is distinct.

R. Saville.—The working of the Anatomy Act, together with the *pecuniary* "appropriation clause," will appear in an early number. The burial expenses amount to 2*l.* 12*s.* 6*d.*, including the perquisites.

Inspector.—Dr. Jones Quain will give the desired information.

Pugnax.—The assault ought to be particularly guarded against; it would render nugatory all future proceedings in a court of law.

T., of Dublin.—Many thanks for the intended communications.

A Richmond Hospital Student.—Yes,—every justice shall be done him.

Scrutator of Brighton.—It will be disputed and dissipated into thin air.

T. S.—The communication must be authenticated.

B., of Dublin.—An early reply is expected—*Tempus fugit.*

X., of Shropshire.—Any bookseller can supply it—there is no excuse whatever.

An Inquirer.—Dr. Bright of Guy's, not of the Westminster Hospital.

A. T., of Hull.—A twelfth of a grain, twice a day.

T., of Newcastle.—He must favour us with his name confidentially.

All communications and works for review to be forwarded, (carriage paid) to Dr. RYAN, 4, Charlotte-street, Bloomsbury-square.

THE BRANCHFIELD ROYAL

THE

London Medical and Surgical Journal.

No. XXIV. SATURDAY, SEPTEMBER 16. Vol. I.—(1837.)

LECTURES ON DISEASES OF THE SKIN,

Annually delivered in Paris,

By M. Biett,

Reported by MM. Cazenave and Schedel.

URTICARIA.

Urticaria is a non-contagious exantheme, and characterized by prominent patches, variable in form and extent, most frequently irregular, redder and whiter than the surrounding skin; in most cases very fugacious, and always accompanied by a very troublesome itching.

Urticaria, though sometimes acute, generally follows a chronic course, and its duration varies from two or three days even to months and years. That of acute urticaria is from eight to ten days; no limited period can be assigned to that of chronic urticaria. With respect to the duration of the patches it generally varies from a few minutes to twelve or twenty-four hours; however in some rather rare cases they continue for one or two weeks.

Causes.—Whilst this affection attacks all ages and both sexes, and appears at all seasons, it however more particularly attacks children, young persons, and females, and individuals of a sanguineous and nervous temperament. It is more frequently observed in spring and summer. Finally, there are individuals whose fine and delicate skin is so predisposed to it, that the slightest pressure or friction suffices to develope large patches of urticaria, similar to those caused by flagellation.

Urticaria may develope itself under the influence of direct appreciable causes. Thus it is produced by the leaves of the *urtica dioica*, &c. In such cases the eruption, which is more or less local, is most frequently ephemeral and of short duration.

At other times, without our being able to discover the connexion between it and its probable causes, it appears to be developed under the influence of dentition, strong mental affections, indulgence at table, and especially the ingestion of certain kinds of food, mushrooms, almonds, honey, cucumbers, &c. But of all those which have in the highest degree the power of producing urticaria, are muscles, crawfish, certain shell-fish, certain smoked fishes, dried or salted. In these latter cases it is generally attributed to a greater or less degree of putrefaction in these animal matters; a thing however which is far from being proved: for among several persons who eat them one only may happen to be affected: we must then admit a certain disposition, which is sometimes so evident, that there are some persons who cannot, under any circumstances, make use of this food without invariably seeing urticaria developed. Mr. Biett in his clinical lectures has quoted cases of urticaria produced by the use of balsam of copaiba.

This eruption sometimes accompanies an intermittent fever of a quotidian or tertian type, or an irritation of some internal viscus. It may also co-exist with entirely different affections of the skin, particularly with *lichen simplex*. Lastly, it might be connected with some peculiar and unknown state of the system.

Symptoms.—The course of the eruption is extremely irregular: generally accompanied with general symptoms, most frequently presenting only those which are peculiar to it: it may, for a duration of some hours up to several weeks, disappear and return several times, leaving, however, but a short interval between its returns, so as ultimately to cease altogether: lastly, in a considerable number of cases

it ceases so as to reappear at more or less remote intervals, and by these irregular returns, it continues for months and even for years. Thus we have seen in M. Biett's wards several instances of chronic urticaria of more than a years duration.

According to its form, progress, and symptoms, Willan has divided urticaria into several varieties. They have been admitted by M. Biett, who has reduced them to the three following:

1st. *Urticaria febrilis.* (Urticarian fever properly so called). The eruption is preceded for some days by headache, nausea, fainting, epigastric pains, and anxiety: it is accompanied by some horripilations: it commences by a general sensation of itching with a feeling of heat over the entire surface; red or whitish elevations, surrounded by an areola of a bright crimson red, some make their appearance, especially on the shoulders, loins, inner surface of the fore-arms, and around the knees. They are prominent, sometimes circular, but most frequently irregular; their edge is hard, their extent variable; being sometimes very numerous and as it were confluent, they unite in several places: the extremities then seem as it were tumefied, and the skin presents a red tint which is almost general (*urticaria conferta*, Willan). An itching and a very troublesome sensation of formication accompany the eruption, and allow the patient but very little rest. The itching is principally increased by the heat of the bed. The eruption does not continue during the entire disease, which lasts from seven to eight days, including in this the period of invasion: it appears and disappears irregularly over almost all parts of the body, and its return, which in general takes place in the evening, is accompanied by a slight acceleration of the pulse. The patient may even by scratching himself make it return at pleasure over several parts. The duration of the patches vary from four, five, or six minutes, to one, two or three hours. In some still rarer cases the patches have a longer duration (*Urticaria perstans*, Willan). They may remain one, two, or three weeks. The predominant symptoms, during the course of the disease, are depression, anorexia, fever, and gastric irritation more or less marked. These symptoms gradually disappear, the eruption becomes imperceptibly less, it returns no longer, and does not occasion any other feeling than that of a slight itching; at last it ceases altogether, and in some cases when the exantheme has become very marked and very general, a slight desquamation takes place.

This variety presents all the symptoms of intermittent fever; we have seen it return by regular accessions and disappear entirely with the fever, and reappear on the next day with it. In this case was the eruption but an additional phenomenon (epiphenomenon) or did it constitute the principal disease? It would be difficult to solve this question; but this is quite certain, that we have seen it yield several times, under such circumstances, together with the fever, to antifebrile medicines alone, as for instance to the sulphate of quinine. It then often seems to be developed under some morbid state of the liver, and we have sometimes seen patches of urticaria of a very well marked jaundiced tint. In this case the itching was intolerable.

It is to this variety that the urticaria produced by the ingestion of the different substances already mentioned may be referred. It may then be developed at the end of some hours; but in general it is on the following day it is observed.

One or two hours after the ingestion of this food the patient generally feels a weight in the epigastrium, vertigo, nausea, general depression; the skin soon becomes hot, and the eruption appears. The symptoms are nearly the same as those already described, only they are frequently accompanied with vomiting and purging; the eruption is much more general, and it is then in particular that the patches become confluent, and that the swelling exists; the face is then often very much swollen, and the itching insupportable. In some cases the urticaria is complicated with erythematous patches of considerable extent. Lastly, this variety which in general diminishes in severity at the end of from thirty-six to forty-eight hours, and then soon disappears merely leaving behind slight traces on the skin for a few days, which under some circumstances are very few in number, may terminate in death. But in this case it is obvious that we should attribute it much less to the violence of the urticaria than to the deleterious action of the ingesta.

2d The *urticaria evanida* pursues an entirely chronic course. The eruption appears at irregular periods, sometimes in one point, sometimes in another; but it often attacks but one single region. It is not accompanied with fever, and in general disappears at the end of some hours. It is chiefly in this variety that the patches which are rarely of a round form, are

irregular, and bear some resemblance to those which might be the result of flagellation. They are not accompanied by any erythematous areola, and present no other symptoms except a very severe itching. The *urticaria evanida* generally lasts for several months, and it is often seen to continue even for entire years. M. Biett has seen it continue for seven years. It is often observed in women and in persons whose skin is very sensitive. Lastly, it frequently resists the most rational means of treatment, and in a great number of cases it appears closely connected with some change in the digestive organs, and chiefly in the stomach. Nothing, however, is more frequent than to see this disease in persons who enjoy perfect health.

In some cases the itching is replaced by a sensation of subcutaneous pricking which is very acute, resembling that which is occasioned by a needle sunk into the skin (*urticaria subcutanea*, Willan). This pain, the only appreciable symptom, is not accompanied by any eruption, except by some red points not much raised; and it is only at very remote intervals, that some patches appear. The *urticaria* which presents itself with these characters, seems to be chiefly produced by intense mental excitement, or by a sudden change of temperature. It is very uncommon. M. Biett has seen it but twice.

3d. *Urticaria tuberosa.*—In this last variety, which is also very rare, the urticaria presents itself with much more severity. It is no longer patches with a little prominence, but real tuberosities more or less extensive, deep-seated, hard, accompanied with difficulty in moving, pain and tension of a very acute nature. It appears chiefly towards evening and at night, on the next day it has entirely disappeared, leaving the patient dejected, weak, languid, restless, and complaining of general lassitude. It chiefly occupies the extremities, and the lumbar region. It sometimes presents itself with symptoms much more serious. Thus in the Hospital St. Louis, in a patient in M. Biett's wards, we saw it accompany a quotidian intermittent, and continuing for four years after, we found it to occasion, in consequence of swelling and great distension, ecchymosis, ruptures, and ulcerations: we have seen it, in many an accession, occasion general tumefaction, sometimes so great that the patient had actual attacks of suffocation: the movements were limited, the breathing was short, the neck swollen, the face puffed and of a purple colour, the pulsations of the heart intermitting, sometimes even imperceptible; and death, which seemed impending, was frequently warded off only by copious bleeding. This patient, who had been in several hospitals, and with whom all the ordinary means had failed, was cured by Fowler's solution.

The *urticaria tuberosa* seems to be chiefly produced by excess in diet, and by the abuse of spirituous drinks. Its duration, which as we have seen, may be for several years, is ordinarily for several months.

Diagnosis.—The form and elevation of the patches, the presence of itching and the fugacious character of the eruption are signs sufficiently characteristic to prevent us from confounding urticaria with any other exantheme.

In the *lichen urticans*, which might be mistaken for some cases of urticaria, the papulæ are rounded, much less extensive, less prominent, their tint is deeper; they are more resisting under the finger; they never disappear spontaneously, and in fine they always present around them the elements peculiar to lichen, real papulæ which it is suffiicient to have seen once in order never to confound them with the patches of urticaria.

The *urticaria tuberosa* might under some circumstances be confounded with *erythema nodosum*. The acute, continued, and persistent course of the erythema will suffice, in all cases, to distinguish it from this serious variety of urticaria, which presents itself with entirely opposite characters.

Urticaria sometimes exists in the same individual with other eruptions, with *erythema*, often with *roseola*, sometimes with *impetigo* and *lichen*.

Prognosis.—Urticaria in general presents no danger in itself. The *urticaria tuberosa* might alone, in some cases, become alarming; but it always constitutes a painful and serious disease from the itching and its obstinate duration.

Treatment.—The urticaria, which is the result of direct causes, does not in most cases call for any treatment. Acidulated local applications, one or two tepid baths, weak lemonade, would be the only means to be employed, should the eruption not disappear promptly. Lotions with acetate of lead diluted in water with a solution of sub-carbonate of potass, or even baths rendered alcaline by the addition of this salt, are sometimes necessary to appease the very severe itching,

especially when the eruption has been produced by the contact of certain insects (chenilles) The simple febrile urticaria readily yields to a strict regimen, to cooling drinks, and to some warm baths. Some purgatives are often useful. But when it is occasioned by the ingestion of certain kinds of food, we should hasten to excite vomiting, if it have not already taken place. Then, we should give a strongly acidulated drink (barley water with a drachm of sulphuric acid or nitric acid to the pint) sugared water, and every hour, from thirty to forty drops of ether on a bit of sugar.

Chronic urticaria is much more difficult to be eradicated; we must then chiefly insist on regimen, taking care to suppress every thing which appears to exercise any influence on the developement of the eruption. In some cases it is good entirely to change the habits of the patient. A few bleedings, either general, or by the application of some leeches round the anus, might be very useful in young plethoric persons, and in women whose menstruation is irregular. Simple tepid baths, when the disease is of long duration, produce a less advantageous result than the alkaline or vapour baths, or even vapour douches, when the disease attacks a part by way of preference. Acidulated drinks, gentle laxatives, are the means most suitable in most cases, to be added to the preceding. When the urticaria accompanies an intermittent fever, the latter affection must be combatted by suitable treatment. Thus we sometimes obtain some success from the sulphate of quina; the febrile attacks cease, and most frequently with them the eruption disappears. Lastly, if the quina had failed, and the intermittent urticaria presented itself with the serious symptoms mentioned, we have above seen that we have recourse to Fowler's solution, with some chances of success.

It is always improper and dangerous to use any local means to repel this eruption which might rapidly induce fatal metastasis to the brain, lungs, &c.—R. [The hydrargyrum cum creta with rhubarb in small doses is one of the best remedies in the urticaria of children.—R.]

VESICLES.

(*Vesiculæ*)

The diseases ranged under this order are characterized by small elevations of the epidermis formed by the collection of a serous and transparent liquid. These elevations have received the name of vesicles. In some cases the vesicles ultimately lose their transparence and assume a yellowish tint. The serum may be reabsorbed; most frequently it is effused over the surface of the skin, where it sometimes forms whitish scales, at other times thin crusts, of a yellowish colour and lamellated appearance.

These diseases may follow a different course; some are essentially acute: *varicella, miliaria.* The others sometimes present themselves in the acute state, but more frequently their course is chronic: *eczema, herpes,* and *itch* (gale).

Their duration varies from some days only to one or two weeks, some months, or even to years.

Symptoms.—Vesicles, which are sometimes preceded in their appearance by general symptoms, as in the species essentially acute, succeed to rough surfaces, of greater or less breadth, often almost imperceptible, in the centre of which the epidermis soon becomes elevated. Sometimes, on the contrary, they are developed without being preceded or accompanied by any other symptoms than a more or less annoying itching.

In their course the vesicles sometimes rest on a red and inflamed surface, or they do not present the slightest inflammatory areola.

They may be small, acuminated or globular; or broader, projecting and irregular, or else flattened. In some cases they are discrete; in others they are agglomerated, and form large surfaces which appear roughened (hérissées) as one might say, with an immense number of small white points, of a silvery hue.

With respect to form they most frequently cover surfaces irregularly circumscribed, and of variable extent; they sometimes form bands of greater or less breadth, in the form of demi-cinctures, or else they are regular rings.

Seat.—The vesicular affections may attack all the parts of the body; they often cover it entirely, as occurs in the acute species, *varicella, miliaria,* and sometimes *eczema;* in certain cases, even the itch may attack almost simultaneously the entire skin. Generally speaking, however, *eczema, herpes,* and the itch are limited to one or several regions, and often occupy but a very circumscribed extent.

Causes.—Among the vesicular affections the itch alone is contagious; the others result from an inappreciable disturbance of the system, and may be developed, in

some cases, under the influence of an external cause.

Diagnosis.—The presence of vesicles, independently of the characteristic symptoms which appertain to each species, will almost always suffice to prevent any mistake in the diagnosis; and though, in some cases, certain vesicular affections appear at first view, capable of being readily confounded with pustular inflammations, there still exists between them a well-marked line of demarcation, if it be considered that the one always commences by vesicles, and that if they sometimes lose their transparency, they never contain any thing but a sero-purulent liquid, that they are constantly accompanied by transparent vesicles, and lastly that, in concreting, the sero-purulent liquid never gives rise to any thing but squamæ, while the others always commence by small collections which are really purulent and are accompanied by a more severe inflammation, and give rise not to squamæ, but to thick crusts, &c.

Prognosis.—Vesicular affections are in general not dangerous; some of them (the *acute eczema*, for instance), might sometimes become so by their extent.

They may terminate in resolution; the liquid which raises the epidermis is reabsorbed, and a slight desquamation is set up. It is the termination of *miliaria*, and sometimes that of *eczema*. At other times the fluid becomes concrete, and lamellated crusts are formed of a yellowish colour. This is what is observed in eczema and *herpes* In other cases the liquid is effused over an inflamed surface, which becomes excoriated, and exhales a serum more or less copious (*chronic eczema*). Sometimes again, real ulcerations are formed (*zona*).

Treatment.—Vesicular affections, in general, require but a very simple treatment. Antiphlogistics are the best means to be employed with those which put on an acute form. With respect to those which are chronic, they sometimes require a particular treatment, and oftentimes a very active one which, however, they may obstinately resist for a considerable time.

MILIARY FEVER.

(*Sudamina—Miliary Fever.*)

Miliaria is characterized by the eruption of vesicles of the size of a grain of millet, spread in variable numbers over a greater or less extent of surface, and which almost always accompany some other affection of much more severity.

All parts of the body may be the seat of these vesicles, but they are principally observed on the trunk, either anteriorly or posteriorly. They also are developed on the extremities, but less frequently on the face. The eruption is almost always limited to surfaces of greater or less extent; it seldom occupies the entire body.

Causes—The appearance of miliary fever always coincides with greater or less excitement of the tegumentary envelope, and with sweats more or less profuse. It comes on, as a concomitant symptom, in a number of gastro-intestinal affections, and its developement generally coincides with the paroxysms. It is frequently observed in puerperal fevers, particularly when several serous membranes are simultaneously affected. It also accompanies the sweating sickness, certain cases of rheumatism, and sometimes scarlatina. In some cases of epidemic gastro-enteritis, miliary fever has been observed as one of the constant symptoms.

This disease may generally be considered as symptomatic of a much more serious affection. There are cases, however, where it is, one might say, idiopathic, when it is developed, for instance, in persons in good health, after violent exercise, during great heats in summer.

Miliary fever is then accompanied by a sensation of heat and very troublesome itching; the number of the vesicles is sometimes very great, but the eruption is ephemeral, and everything is again right in the space of twenty-four hours.

The symptomatic miliary may be developed in all stages of the diseases which it accompanies, and may even present itself once, or oftener, while they continue.

Symptoms.—It is not preceded by any particular symptom, except an exacerbation of the principal disease. In general, the appearance of the vesicles is accompanied by sweats, more or less copious, and by a sensation of heat, and itching which is very troublesome where it presents itself. The vesicles are seldom confluent, but they often form patches of variable extent, where they are grouped together and more or less approximated. Their number is very variable; sometimes a considerable part of the body is covered with them; at other times they are only here and there.

The vesicles, at first very small and transparent, are often developed over an intensely red surface, and this tint is then very visible through the vesicles (*Miliaria rubra*). In the space of from

twenty-four to thirty-six hours, the vesicles are increased in size, and then inclose a milky fluid, which gives them a pearly appearance *(Mil. alba)*. This is particularly striking in scarlatina, when a great number of these vesicles cover large surfaces of a raspberry-red colour. They are flaccid to the touch, and promptly disappear, either by the absorption of the contained fluid, or by its escape externally. Sometimes the miliary ceases when the vesicles desiccate; sometimes successive eruptions prolong its duration for one or two weeks.

In certain severe cases of entero-colitis, accompanied with general depression, the miliary eruptions which are often developed, during the night, in the paroxysms, present on the next day a state purely vesicular, and the skin which they cover is not unusually red; one would say that an immense number of small drops of limpid water were spread over its surface. These vesicles disappear in the space of about twenty-four hours, and a small epidermic exfoliation takes place over the parts which it occupied.

Eczema is the only disease with which miliary fever might be confounded: it differs from it in the circumstances under which its appearance takes place, in its rapid course and its short duration. Besides in eczema the vesicles are very confluent; they are found in great numbers, collected together in a very circumscribed space, whilst in miliary, the vesicles almost always isolated, are larger than the vesicles of eczema.

The prognosis of *Sudamina* is not unfavourable; it is proportioned to the severity of the disease which they accompany, and the appearance of this eruption usually announces very considerable excitement, without however our being warranted in considering it alarming in itself.

Miliary fever requires little treatment; it is the general affection, whatever that may be, which must be combatted; and we feel ourselves warranted in stating that it is the anthiphlogistic treatment which it is expedient to employ. [Miliaria may appear in cases of typhus and other fevers, purpura, rheumatism, and other diseases, and may be purely symptomatic. In such cases, the primary disease requires most attention, and the treatment must be modified according to the nature of the disease.—R.]

LECTURES ON SURGERY.

By John Hunter, F.R.S.

OF ADHESIVE INFLAMMATION.

Although inflammation is an action produced for the restoration of the most simple injury in sound parts that exceeds union by the first intention, we must still look upon it as one of the most simple operations of nature. It is to be considered only as a disturbed state of parts, which require a new but salutary mode of action to restore parts to that state in which the natural mode of action will be necessary. But this same operation can and does vary, and is often carried much further than union, according to circumstances; and is often attended with disease, and that of various kinds, by which it becomes more and more complicated. It becomes therefore necessary to begin by describing it in its most simple form, and with its most general effect, and to particularize further as we go on.

I shall call everything inflammation that produces the following local effects, viz., pain, swelling, and redness, all depending on one cause, and occurring at the same. Out of inflammation arise many other local effects, which may be called secondary; such as adhesions, suppuration, ulceration, and even death or mortification in the part, and universal affection, such as sympathetic fever, and universal death.

The act of inflammation is, as I have said, most probably in the smaller vessels. What the action is, or in what it differs from the common action of these vessels, is not easily ascertained; for we are better able to judge of the immediate effects than of the immediate cause.

Hitherto I have only shown that this inflammation takes its rise, and is capable of uniting parts, when preternaturally divided; but we shall find that it is capable of arising from very different causes, and that it is capable of producing adhesions in whole parts, or in natural separations, such as common cellular membrane, large circumscribed cavities, joints, &c., and these effects will be found to answer very important purposes.

As the adhesive inflammation precedes the suppurative in every particular, excepting the outlets, and the suppurative the ulcerative, the propriety of following this order of nature in treating of them will appear evident.

Adhesive Inflammations.—If the actions of adhesive inflammation were allowed to extend themselves, it would prove more hurtful than any good that could arise from it; hence there are natural obstructions to its extending, which we shall first consider.

Natural Causes of the limiting of Adhesive Inflammation.—I have already observed that exposure of internal surfaces becomes the immediate cause of inflammation; that when it extends further than the exposed surface it is by continuous sympathy; and that when a whole cavity is wholly exposed, the whole would take on inflammation. We may now observe, that whenever a cavity is opened, the simple contact of its sides, or even the simple contact of these with any other living part, will set bounds to the immediate cause, which is the exposure.

To explain this further, we may observe that there is no such thing in an animal as an empty space in any of the circumscribed cavities of the animal body, exclusive of the outlets or reservoirs, which are imperfect, not being circumscribed. Every other part of an animal is either connected by the cohesion of one part with another, or by simple contact. This holds good too in the cellular membrane as well as the circumscribed cavities; for if a wound is made into either, we find that the surfaces of both, beyond the cut edges, are entire, and generally in contact with one another.

To explain this position, let me instance a case. If we make a wound into the cavity of the belly, in a sound state of those parts we shall find every viscus is in contact with some other viscus, and that the whole inside of the peritoneum is in contact with the viscera, so that no space is unfilled. If this wound is not allowed to heal by the first intention, still we find that no inflammation will take place, or extend further than the attachment of those parts to the cut edges, excepting what is owing to continuous sympathy. If this were not the case, every part of the cavity must inflame, because every part would be equally exposed; and if the contact were removed at the time of receiving the wound, or at any time afterwards, the whole cavity must inflame, every part being in the same predicament as regards exposure.

The same thing would happen in the cellular membrane, if those cells were not in a natural state in contact, and inflammation would as readily extend over the surfaces of each cell as air does when blown into part.

Inflammation, then, takes place at the edges of the exposed parts in order to preserve this contact, as well as to serve as a basis for future operations: and in cases of spontaneous inflammation of circumscribed cavities, we find that where this contact is completest the inflammation and its consequences are the least; as in the belly, in cases of peritoneal inflammation, the inflammation is greatest in the angles between the viscera, where the parts are not so well in contact.

The effect of simple contact, in excluding the irritation from extending, was well illustrated in a woman who had the Cæsarian operation performed. After the child was extracted, the wound could not be brought together well, therefore so far gave rise to peritoneal inflammation; but the belly closing and falling in on its contents, the whole came in contact as before. The woman lived twenty-six hours, which gave time for the inflammation to take place. After death, it was found that the intestines were united to the peritoneum all round the wound, for above half an inch in breadth, and the surface of the intestines, which lay unattached at the bottom of the womb, was inflamed, while every other viscus, as also the peritoneum beyond the adhesions, were free from inflammation.

The adhesive inflammation seems to be nearly of the same nature, whether it arises from the constitution, from a particular disposition of the part, or from some violence inflicted on the part; the final intention being nearly the same in all these cases, for in all it is an effect that has a tendency to repair an injury, as is evidently shown in many cases of violence, though it may not in all. Its utility is most obvious in those cases which arise from the constitution, or from disease in a part. When the adhesive inflammation arises from the constitution, it may be from some disease of that constitution, and, if so, it may be supposed to be of service to it, especially if it should be supposed to be the termination of an universal irritation in a local one, and by that means relieving the constitution of the former, as in gout. But where it is only a simple adhesive inflammation, I am rather apt to think that it is rather more a part of the disease than an act of the constitution, or termination of the disease. When it proceeds from a disposition in a part, it must be considered to arise from a disease of that part.

Although in all cases and in all parts the adhesive inflammation is not absolutely necessary and preparatory for the suppurative inflammation, yet if it is in the cellular membrane or a circumscribed cavity, then its effects will prove salutary. It may indeed be considered absolutely necessary to prevent greater mischiefs, for very bad consequences would arise without it. The object of it in these parts is to unite the parts together for their future benefit by means of the coagulable lymph and serum thrown out, by which the extension of the suppuration will be limited.

It would appear from observation that some surfaces of the body have a much stronger disposition to throw out coagulable lymph than others; or we may view this effect in another light, that some surfaces of the body do not so readily unite by exudation of the coagulable lymph as others do, and therefore on such surfaces there is commonly a much larger quantity thrown out than probably would have been if union would readily take place. Thus we see in inflammations of the heart that the coagulable lymph is thrown out on the external surface in vast quantities, while at the same time the heart shall not adhere to the pericardium. This extravasated matter is always of the same nature with that of the parts which produced it, which is a curious fact. If the disposition of the part is cancerous, the extravasated coagulable lymph is a poison, for on being absorbed it contaminates the absorbent glands, producing cancer; and probably the same takes place in every poison that is capable of irritating to inflammation and extravasation.

Appearances of adhesive inflammation.—The part inflamed becomes redder than common, and redder and redder as it advances; the red being of a scarlet hue when the inflammation is healthy. The part becomes apparently more vascular in a natural state, and most probably is really so, both from new vessels being set up in the old parts, and from the adventitious uniting substance becoming vascular. These new vessels become of use both in the state of adhesion and of suppuration; in the first to give powers of action to this new substance which assist in preventing suppuration, in the second to form a basis for the future granulations. In consequence of this extravasation the parts swell, which is generally in proportion to the inflammation, the swelling being probably most where the inflammation is greatest, that is, at the point of irritation, and it is gradually lost in the surrounding parts. The whole swelling appears like a part of the body a little changed, without containing any extraneous matter, and indeed is simply formed by extravasation of fluids, without their having undergone any material visible change.

Such inflammations as approach to the skin often produce vesications, which are filled with serum and often coagulable lymph, both which are sometimes tinged with red blood. This arises from the violence of the inflammation producing an apparent degree of weakness, approaching to a death, in the connexion between the cuticle and cutis, the life being in this part very weak, for in the beginning of mortification and of the putrefaction of dead bodies it is produced. This connexion of the cuticle is more or less destroyed in every inflammation of the skin. We seldom see an inflammation attack the skin but the cuticle comes off sooner or later. We generally observe it peeling off in flakes after the inflammation has subsided.

The pain attending inflammation would not appear to be in all cases very acute, for many have very visible inflammations which do not give very much pain. However, this will vary according to the violence of the inflammation, or rather according to the quickness of its progress and its approach to suppuration; for when there is a quick dilatation of the vessels, and rapid extravasation of the juices, the sensations arising from such will be increased; but in cases where its progress is slow, as from indolent tumours, the mind is hardly sensible of its progress. That it must sometimes be very trifling is shown by the fact that on opening dead bodies we often find strong adhesions where the friends of these persons had never heard during life of a single complaint. We also see cases in which this inflammation arises from violence, where it gives very little pain. A man shall be shot through the abdomen, and, if none of the contained parts are materially hurt, the adhesive inflammation shall take place in all the internal parts contiguous to the wound, yet no degree of pain is felt from this process. In many bruises and in simple fractures the pain from the inflammation is very trifling, although there may be much laceration of the parts.

Of the Uses of Adhesive Inflammation.—This inflammation may be said to arise in all cases from a state of the parts which they cannot remain in; therefore

an irritation of imperfection takes place. It may be looked on as the effect of wise counsels proceeding from a consciousness of imperfection: nature is taking all the defensive precautions possible, for in all cases we shall evidently see it answer wise purposes, such as checking the suppurative inflammation, by making parts adhere which must otherwise fall into that state; and where this effect does not fully take place, it acts as a check to the extent of it, as we see in circumscribed cavities. In the tunica vaginalis, after the operation for hydrocele the parts often collaspe and unite to other parts of the same sac by adhesive inflammation, which prevents the suppuration extending over the sac, so that partial collections of water again take place. In still larger cavities, as the abdomen, where partial inflammations often take place, as after child-bearing or wounds of this cavity, we find this adhesion takes place, which either prevents suppuration altogether or unites the parts around it, and as the abscess enlarges the adhesive inflammation spreads, and thus excludes the general cavity. The same thing happens in inflammation of the pleura or surface of the lung. The cellular membrane everywhere in the body is united exactly in the same manner; the sides of the cells, as it were, sweat out the uniting matter, which, coming into contact with the opposite surfaces, joins them into one mass.

The lungs are subject to two modes of action in inflammation; being so circumstanced as to partake of the character of both orders of parts, the circumscribed cavity, and the secreting surface or outlet. The cellular membrane of the lungs readily admits of adhesive inflammation, like the cellular tissue elsewhere; but the inner surface of the air-cells, like the urethra, passes directly into the suppurative inflammation, and the matter which is thus formed is obliged to be coughed up. It is, perhaps, impossible to produce inflammation of the one without the other, which is, perhaps, the reason why inflammation of these parts is treated with such bad success.

We cannot give a better illustration of the use of the adhesions arising in consequence of this inflammation than to contrast it with the erysipelatous. How far this disease is to be ranked amongst inflammation I will not at present say; but it has some of the characters, as swelling, redness, pain, &c. The swelling arises, not from extravasation of coagulable lymph, but from serum: and it has other peculiarities, as being generally superficial, and spreading along the surface with an abrupt edge, which is, perhaps, owing to its specific character being always confined to the part affected. It has nothing of the adhesive character attending it which was not necessary; because this inflammation being confined to the skin seldom produces suppuration. But it sometimes happens, when erysipelatous inflammation attacks deeper-seated parts, that it suppurates; and when it does so, it appears often to be a forerunner of mortification.

A man was attacked with an inflammation on each side of the anus. It had such an appearance as might have been expected from the suppurative and erysipelatous inflammations joined: it had an œdematous appearance. He was bled, and the blood appeared very sizy: he took physic, and was fomented. The next day the inflammation had reached the scrotum, where a fluctuation, with a gurgling of air, was felt. I now made an opening near the rectum, and in the scrotum, and let out a quantity of dirty-coloured matter. It continued to spread over the loins, scrotum, bottom of the abdomen, &c., where I made openings, and out of which the cellular membrane hung like wet tow. In this case, the suppuration was diffused for want of the adhesive process preceding or accompanying it, by which means it would have been limited.

Adhesive Inflammation sometimes imperfect.—Sometimes it happens that the adhesive inflammation is so imperfect that it cannot set bounds to itself, and still less to the suppurative. This may be owing to two causes; first, the violence of the inflammation and quickness with which suppuration ensues, that is, before the parts have sufficiently united; secondly, the inflammation may be, as I suspect it is, of the erysipelatous kind, especially when there is a tendency from the beginning to mortification. This mixture of the suppurative with the adhesive, or hurrying on of the suppurative, I have often seen in the abdomen of women who have been attacked with peritoneal inflammation after child-birth; and when these circumstances become the cause of death, we find matter mixed with coagulable lymph, as if formed together.

The adhesive inflammation also takes place in cases where it is impossible it should produce the same good effects; as in wounds which are not allowed to heal by the first intention, as a stump after

amputation, and many other parts. But it is one of those fixed and invariable principles of the animal machine, that, on all such irritations, the uniting process should be produced, although, like many other principles in the same machine, it cannot always produce the same salutary effects. So that although the wound is not allowed to, or cannot, heal by the adhesive inflammation, yet the parts go through the common actions consequent upon being wounded; first, they throw out blood, as if to unite the parts by the first intention; and then, the vessels contracting themselves, coagulable lymph, with serum, is thrown out, which has the effect, even in such wounds, of preventing a great extension of the inflammation, while the contraction of the vessels prevents the inflammation from running along their inner surfaces.

Effects of adhesive inflammation on the Constitution.—These effects are very slight, even when the inflammation arises from violence; but the effects of those inflammations which are indolent in their progress are still more trifling in the constitution. This arises from the slowness of the alteration produced in the part, as it were, insensibly stealing on the constitution.

We know that one effect of adhesive inflammation is the uniting of parts not intended by Nature to be united, and which must thus be made less moveable on one another; in fact, they must at first have little or no motion on one another, as occurs in the cellular membrane and circumscribed cavities: but it happens that motion is again obtained after a time by the elongation of the connecting part, which is effected by the repeated endeavours for motion. These uniting media are seen to become vascular. They are perhaps often the cause of many indescribable sensations, which cannot be called pain. In the heart they are the cause of palpitation, &c.

On the resolution of Inflammation.—Since an animal body can be made to act improperly by impression, we can see no reason why, when acting improperly according to such impressions, it should not be made to act properly by the same mode, namely, by impression.

The cure of inflammation is resolution, and an attempt towards it, when in the adhesive state (for this is intended to prevent suppuration taking place), must be in general made only under the following circumstances, namely, when inflammation arises constitutionally, or from disease of the part. In cases of accident where there is no exposure, as also where there is, but that exposure is removed in time by bringing the parts into contact, and where the life of the parts has not been destroyed, in all such cases we find that resolution will readily take place.

It is commonly supposed that there are a great many local inflammations which should not be resolved. An inflammation arising from a preceding indisposition in the constitution, commonly called critical, has always been classed amongst those which are not to be resolved; it has been insisted on that the inflammation should rather be encouraged, and suppuration produced. But in such treatment it is always under the idea that the inflammation is in such parts as will readily admit of cure when suppuration takes place; for if the disease is otherwise situated, the cure of the constitution by suppuration will be a mode of cure which will reflect back another disease on the constitution, under which it will sink; therefore resolution in such situations should, if possible, be brought about. Many deep-seated inflammations, if allowed to suppurate, will, of themselves, most certainly kill: gout also, in the head or stomach, should always be resolved, and left to settle in some other part less connected with life. If inflammation is really a concentration of the constitutional complaint, and if, by not allowing it to rest there, the same disposition would really be diffused over the whole animal again, and would be liable to affect some other more important part. Still it does not appear necessary that it should suppurate, for suppuration is only a consequence of inflammation; not an immediate effect of the original constitutional disease, but a secondary one. As suppuration, therefore, is only a thing superadded, and as we shall generally find that inflammation subsides as suppuration comes on, I see no reason why inflammation should not in the present case as well subside by resolution as by suppuration. It may, however be supposed, that as this suppuration is not a natural or immediate effect of the disease, yet as it is a continued local action, that it is capable of diverting the disease to the part. I hardly know an instance where inflammation from violence may not with propriety be resolved, and prevented from going into suppuration, except where it relieves the constitution from any prior disease. Thus, Mr. Foote was cured of a violent pain in his head by amputation

of his leg; but he afterwards died with a different complaint in his head. Might not the first diseased action in the head be altered in this case, and an action of a different kind induced, which proceeded to the degree of effecting his death?

THE MEDICAL JURIST.

No. 2.

INSANITY.

3. *The Passions.*—These, if indulged in, become habitual, and the state of mind which they induce is then little removed from frenzy. Children should be early taught to control the impetuosity of their temper. Undue severity, however, creates duplicity and cunning. The most injurious effects may be produced on a child of sensibility, by making a favourite of another. If there be great pride, such conduct may only induce dislike to home, but in some cases the sleep is disturbed, the spirit broken, and idiotism is the ultimate consequence. I knew a young man, says Dr. Traill, who was not acquainted with his father till he came of age, and a particular circumstance prevented the latter from receiving him as a son. His reason gave way. He is still alive, though it is twenty years since.

Anger produces flushing of the face, or if it be more violent, an ashy paleness with a glaring eye, dilated pupil, clenched hands, and quivering limbs. All these symptoms evince a tendency to congestion of the brain, and are dangerous in those who are subject to apoplexy, epilepsy, and other diseases of a similar nature. In a man, subject to fits of anger, whose head is bald, you can see the blood, during the paroxysm, gradually mounting over the scalp. Mental alienation sometimes shews itself, for the first time, in a fit of anger.

Sudden despair, fright, or horror, will sometimes produce insanity. Pinel says it sometimes occurred, during the French Revolution, in young persons, on witnessing the butchery of their parents. Dr. Traill saw a case of idiotcy from terror. The circumstances were the following:—some young persons in the country, talking in the evening of superstitious fears, a young lady declared so vehemently the impossibility of her being made to feel them, that the others determined to try. They accordingly borrowed a skull from a medical student; put a cap on it; and placed it in her bed. When she retired, they crept up stairs to await the result. They heard no noise, and went to bed. Next day she did not appear at breakfast. They became alarmed; and, on going up stairs, found her sitting up in bed, playing with the skull, and with the grin of idiotcy on her contenance. She never recovered.

Intense joy is sometimes a cause of insanity. I knew a gentleman, says Dr. Traill, who by some uncommonly lucky speculations, became suddenly affluent. He became excited, and thought he had discovered a plan, by which the naval superiority of England might be secured for ever. On my visiting him, he said he would make my fortune; and wrote me an order on the Bank of England for ten thousand pounds, as an earnest of what he would do. He showed me an address to the prime minister, containing a plan for paying off the national debt. Sometime afterward my poor friend died in a madhouse. Another gentleman had a passion for rare books, though he never read any. He also purchased the most expensive furniture and plate. The case went on to weakness, paralysis, and complete insanity at last.

Hope may cause insanity. Dr. Traill has known it produced by the anticipation of marriage.

Love, even without despair, has been known by Dr. Traill to produce insanity in both sexes; and where the parties were of such excellent moral dispositions, as to make it evident the cause was mental and not physical excitement. Excess of sexual intercourse will sometimes produce it. A baronet married a lady of great personal charms, and soon became debilitated and epileptic from sexual excess; absence from home, and the use of tonics, restored him. One of the most violent cases Dr. Traill ever saw, was from disappointment in love; but in that case there was an hereditary taint in her constitution. Jealousy is a more frequent cause than love. A friend told Dr. Traill of a case, in which a woman cut off her husband's penis, as he lay asleep, in order to disappoint his ideal mistress.

Exposure to cold while heated, will sometimes produce insanity; probably from repelling the blood from the surface of the body to the brain. Hence it is sometimes produced by catching cold during menstruation. This was the case with a young lady who drank cold water, and sate on the damp ground after a long walk, while the menses were present.

Her insanity became worse as the next menstrual period drew dear; but after a while the flux returned, and she recovered. In another person the same cause might have produced apoplexy.

Hysteria long continued, sometimes degenerates into idiotism. The influence of the uterine system in this disease, is evident from the liability of females to insanity after parturition; especially if the lochia be suppressed. At puberty, and "the change of life," there is a determination of blood to the head.

Intemperance is the most common of all causes; especially intemperance in the use of spiritous liquors, which produces insanity in all its forms. Generally the first visit of person affected from this cause to an asylum is short; but they are soon brought back again, and the case ends in mania or idiotism. The story of of the sailor who "treated resolution with a glass," is a common illustration. Instances of adhering to resolutions of abstinence, are very rare, though Dr. Traill has known several. He told a lady who indulged in secret drinking, that it would end in insanity. She thanked him with tears, and took nothing stronger than tea till her death. A man, who became suddenly rich, thought of nothing but eating, though without indulging in wine or spirits. It settled into a complete monomania.

Insanity has been sometimes produced by the large bleedings which were at one time much practised. Epilepsy and injuries to the head are also causes. Dr. Traill knew one man who went mad from vanity.

With regard to the treatment of insanity, we shall first consider the subject of asylums. One of the first objects to be attained, is sufficient ground for the buildings, and for separate yards for the different classes. These yards should not be overlooked, for exercise ought to be taken free from observation. The Glasgow Asylum is the best we have seen, but that at Perth is said to be a perfect model. There should be separate wards for convalescents, for epileptics, for dirty and noisy patients, and for persons of a better class. There should be long galleries, with sleeping rooms opening into them on one side, each furnished with a window, and with a ventilator above the door, to be shut whenever circumstances might require. These sleeping-rooms should never be called *cells*. At the Liverpool Asylum, Dr. Traill succeeded in banishing iron-bars from the windows; the frames being made of cast-iron, with panes of glass only twelve inches by seven. These windows opened with a swing-sash, with a stopper to prevent their opening too far. The windows of the galleries should overlook only the yard belonging to that particular department. Each gallery should have a separate staircase, but they should all communicate, by doors kept locked, with the governor's apartment. Every gallery should have a room for eating and reading; and by putting convalescents in charge of the rest, it makes them very quiet. At Liverpool every gallery is provided with a bath, a scullery, and a water-closet. Water descends from a high cistern to a lower room, where it is warmed by passing through a boiler of hot water by means of a pipe bent into the form of a worm, which pipe afterwards rises into a room not so high as the cistern from which it originally descended. After the water has been once raised into the cistern, it finds its own way into the bath-room Here the pipe should terminate in a cock, not to be turned by hand, but by the keeper's key. Cold water should be conveyed by another pipe, and thus a bath may be had of any temperature, and the patients will have no access to the fire.

If you can get a patient to work in the garden, or at anything else, it will be a promising symptom of recovery. Dr. Traill has a beautiful set of drawings executed by a patient, who had several relapses before they were finished, and one day threw them at the doctor's head.

The best form for an asylum is that of a St. Andrew's Cross. In Bedlam, which is of a rectangular form, the governor is at a great distance from many of the patients. The horrible abuses brought to light by the Parliamenty Report of 1815, were not confined to private asylums. All should be under the control of an active committee, and a good code of laws. Good temper, activity, and a stout frame, are indispensable for a governor. The beau ideal of a governor, says Dr. Traill, was the one at the Liverpool Asylum. I have often been surprised at his presence of mind when struck, or during sudden anger; and have always found him at his duty, at whatever hour I called; often reading to the patients, or playing draughts with them. His name was Owen. In that asylum a male never entered the female side, without the presence of a nurse or the matron. This is a necessary precaution; for in Yorkshire

several females became pregnant by male keepers and male patients. A nurse or a keeper ought never to be allowed to strike a patient. Dr. Traill often dismissed them at Liverpool because they could not restrain their temper They were ordered to hold the offending patient fast, assisted by others, till the ward-bell brought the governor. Insubordination is generally offensive to the other patients, but sometimes conspiracies are formed. It is better not to require the assistance of patients; but in one case Dr. Traill would have been overpowered, had not the other patients secured the one who struck him.

Maniacs are not now kept, like wild beasts, in dark subterranean cells, chained, lying on straw, without change of raiment, and wallowing in their excrement. If any one should think this not to be a true picture, let him look at the parliamentary returns. Chains have been long abolished at the Liverpool Asylum, and instead of them leathern manacles are used for the wrists and ankles, when necessary. If it was necessary still further to confine the hands, a muff was employed. The strait-jacket is not used there now. If the patient is apt to strike, a leathern strap passes from the manacles to the back, which only allows the hand to reach the face, and this should always be permitted. If the patient kicked, the legs were joined together by a strap, which allowed him to take only short steps. The best way to prevent violence, is always to allow as much liberty as is consistent with safety; and especially to allow the patients to walk in the yards instead of confining them to the house.

Patients often reproach their friends with imaginary crimes. One used to upbraid his wife, when she visited him, with having put him into the asylum, in order that she might enjoy his property with her paramour. She was a woman of exemplary character.

Change of habits will sometimes cause insanity. One man, of very large size, says Dr. Traill, on turning baker, was so overcome by the heat of his oven, as to become maniacal. Owing to his attempts to injure the other patients, I ordered his hands to be secured; for which he owed me much ill-will. One day, while sitting on a bench, I observed him approach me sideways, till he was directly before me. His object was to seat himself suddenly on my thighs, and thus injure them with his great weight; but I slipped on one side, and bruised his buttocks on the seat. Had I expressed any irritation, his malady would probably have been increased; but when he saw me sitting quietly by his side unhurt, he looked very foolish. we were ever afterwards good friends. He recovered, went on board a vessel as mate, and on one occasion, by his prudence, saved it from being wrecked.

In one asylum, the plan of which has been approved by parliament, there are to be sleeping-rooms on each side of the galleries, but this will cause the latter to be dark, as they can only be lighted at one end. The panes of glass in the windows are small, for the patients are apt to throw their shoes, and other articles, through them; and if the panes are large, the mending of them becomes expensive. At Liverpool they cost only one and twopence each. In the water-closets the water should not be at the command of the patients. In one case, where the water was let in by a hinged seat, a patient was observed amusing himself by exhausting the cistern, by alternately rising and setting down. The basin should be deep, and furnished with a "stink trap;" and the keeper, by means of a key, should let the water through it, every three or four hours. The pipe which leads from the basin should not be large, for if so, patients are apt to stuff their clothes down it; and an instance occurred of a patient's making his escape through the water-closet; so that an iron bar was obliged to be put across it.

The scullery is to allow the patients to wash their hands at pleasure, which is very desirable after exercise, &c. If a patient be so mannacled as not to be able to wipe the nose, or the perspiration from the face, he complains of it bitterly, if of cleanly habits; and it is only in a few cases of mania that it can be necessary. If a patient be very violent, he should be put to bed. The bedstead should be made of deal, six feet three inches long, by four feet two inches broad, sloping towards the middle, where there should be a leaden gutter, leading into a vessel to contain the urine. Let him lie on straw, over which a blanket and sheet are thrown, or one of either. There must be staples at the sides, flush with the surface, to receive straps from the manacles and leg-straps. If they attempt to abrade the skin over the sacrum, by raising the buttocks frequently, Mr. Owen keeps the latter down, by a strap passed over the thighs. Spring-locks are better than buckles, being fastened more quickly. They should be opened only by the keeper's key. The strait jacket makes the

patient hot, oppresses the breathing, and prevents his wiping away the perspiration. If the patient requires to sit up, put him on a bench or chair, with a strap passing round the middle. When Dr. Traill went to the asylum at Liverpool, he found a young lady mad from disappointed love; and so furious, that she was kept strapped on a close-stool, where she sat laughing and drumming with her heels. If let loose, she butted with her head, and attempted to bite. Three nurses were required to put her to bed. She liked one girl who fed her. They gave her a ward to herself, and let her loose, with her arms confined by a muff. She at first butted against the Doctor's stomach, and then blew a feather along the floor for an hour. They left her alone, upon which she went to the window, and seemed amused by the passengers. She soon left off butting with her head; was allowed, at the end of a month, to associate with the rest, and through kind treatment, and the removal of restraint, became quite decorous. She is now removed to the house of her friends, and though quite an idiot, walks about, and takes her meals with the family.

Dr. Traill never tried the whirling-chair, which he does not consider safe, on account of its causing determination to the head, and sensations like those of sea-sickness. Pinel recommends the douche, and the French employ it very much. It suddenly confounds the patient, and stops his violence, and is therefore a valuable remedy in maniacal excitement. Fear cannot be recommended as a means of quieting patients, for we have no means of proportioning its violence. Pinel, however, gives many cases of good effects produced by it, and these might be obtained perhaps, if we had better means of regulating the degree of it.

Without classifying the patients, there can be no hope of curing them. The parliamentary returns show that up to 1818, some asylums annually bled and physicked the patients, a ward at a time. This was routine of practice with a vengeance, but it is alleged of a celebrate practitioner. When a patient requires to be secured, it should be by an overwhelming force at once, and without noise or anger. If he should refuse to eat, and has not been accustomed to drink out of the double-spouted mug, he will smile at the idea of making him swallow, and you must then put that measure in force. He will generally open the mouth, after holding the breath a long while, if not, it must be prized open with the key. It is never necessary to break a tooth, and the operation is so disagreeable to the patient, that he will generally avoid it in future. Sometimes the governor must be peremptory and indignant, but never in a passion, or it will ruin his influence with the patients. The medical attendant should treat him with great respect, as should also the servants. Uncontrouled power, however, should not be left in the hands of any man; and the official visitors, or the committee should enquire into all the details, and the conduct of the officers. The servants should be under the entire controul of the governor, as they are apt to be very troublesome. They should not be allowed to subject the patients to any restraint. It is of great advantage to employ convalescents in household occupations. Patients are seldom cured at home, and the visits of friends have often made them agitated, and increased their delirium. Sometimes after having remained quiet for months in an asylum, the mania has returned in two or three days after their being at home.

EPIDEMIC DYSENTERY AT TAUNTON.

To the Editor of the Medical and Surgical Journal.

Sir,—The town and neighbourhood of Taunton have for some weeks been visited with an epidemic, more widely extended in its assaults, and at the same time more fatal, than has occurred within the memory of the oldest inhabitant, and, according to its degree of severity, and as this or that portion of the intestinal canal was affected, assuming the character of cholera, diarrhœa, or pure dysentery—this latter being the more frequent form. It is my intention to draw up as concise and accurate an account of its rise and progress as it is in my power to do, indulging in as little speculation as may be; and if you agree with me in opinion that such an epidemic should not pass without being recorded, you will oblige me by inserting it in your widely circulated journal.

Solitary instances of bowel complaint appeared as early as May and June, and throughout July, but these for the most part yielded readily to medicine, and it was not until the beginning of August that the disease became so frequent as to be regarded as an epidemic, or so fatal as

to attract much attention. At this time children and elderly persons were the principal subjects of attack, but after the first fortnight all ages and both sexes were equally affected. Children and the aged, as might be expected, sunk most readily: the former frequently on the second and third days. The ordinary duration of the disease was ten days or a fortnight, but relapses were exceedingly common, and several who were considered convalescent, and sitting up, were suddenly seized with faintness and rapid sinking of the vital powers. All classes seemed to suffer indiscriminately; but of course the bad clothing, poor food, and wretched habitations of the lower classes aggravated the character of the disease in them, and the sthenic, the usual type, was in them more frequently converted into the asthenic, and bore a striking resemblance to the epidemic which prevailed in Dublin in 1826.

I have heard of no sufficient evidence that the disease was communicated from one person to another, but I can easily imagine that the extremely offensive effluvia from the evacuations may have produced it in some; as in my own person the examination of an evacuation almost caused vomiting, and did in the course of an hour or two act on my bowels as fully as a large dose of castor oil usually does, but there it stopped.

In most instances the complaint commenced suddenly, without premonitory symptoms, like a common diarrhœa; the stools being copious, feculent, and their discharge attended with griping pains; these continued a few days, and in many cases constituted the whole disease. More frequently, however, the demands to stool became more urgent, with most distressing tormina and tenesmus, and with a fixed pain in the iliac regions, and along the arch of the colon, increased on pressure. The stools now contained little more than a jelly-like mucus, mixed with blood, the latter often in great quantity; the skin was hot, especially over the abdomen; the pulse increased in frequency and hard; tongue coated, with red tip and edges, but in the worst cases it had a red and raw appearance; the thirst was excessive, and the urine scanty, high-coloured, and passed with pain and difficulty; langour and depression of spirits. In the more advanced stages of the severe cases, shreds of membrane were frequently seen amongst the fæces, dark and very offensive,—in one instance which fell under my observation to so great an extent, that a large portion of the canal must have been denued of its mucous coat, and the fetor was altogether gangrenous. All the symptoms of the complaint exhibited periodical exacerbations, and in a few there were perfect intermissions.

Although the pathological condition on which the symptoms of diarrhœa and dysentery depend is now pretty well known, namely, vascular congestion and inflammation of the mucous membrane of the intestine, it is much to be regretted that out of the numerous deaths during the late epidemic not one post-portem examination has yet been made; we can only therefore assume that the ordinary appearances would have been observed here; these, however, the symptoms during life pretty closely indicated. The fact of many cases having yielded at once to stimulants and tonics does not at all disprove this position; for, as by these means states of chronic inflammation are often removed, so also by the same means incipient stages of inflammation are frequently cut short, or rather I should perhaps say, states of vascular engorgement bordering on inflammation, are removed, but this mode of treatment, I apprehend, will not often be ventured on.

As to the cause of this epidemic we continue in much the same state of ignorance as we ever have been with regard to epidemics in general. We may remark that it was preceded by an unusually hot and dry July; but here we must rest. During its continuance we had every description of weather, and the wind from all points of the compass; as to the existence of noisome smells, or other changes in the atmosphere appreciable by our senses, they are not sufficiently constant to be attended to.

The disease is now evidently on the decline, few fresh cases comparatively having occurred for some days. It is not possible to ascertain the exact number of persons who have been attached, but we shall be able to form a tolerably correct estimate from the number of deaths which have been registered in the different registry offices, and then ascertaining the average mortality in the practice of the different medical men. Proceeding on this principle it would appear that upwards of two thousand persons have been affected with this disease. This, however, is obviously understating the number, for there were a great many who, from being only slightly affected, or other causes, did not apply to any medical man for advice. There have been registered in the St.

Mary's and in the Trull districts up to the present time seventy-two deaths, sixty-eight of which occurred in the former. I have endeavoured, though without success, to obtain from the registrar of the St. James's district, the number registered by him; but I have reason to believe that they, at least, amount to twelve, in all, therefore, eighty-four. The concurrent testimony of all the medical men with whom I have conversed leads me to fix the average mortality at one in twenty-five. This would give 2,100 as the number affected with this disease; if we suppose that four hundred, which is not probably beyond the mark, have not applied for relief, then 2,500 have suffered; affording sufficient evidence of the widely spread influence of this epidemic. I shall exhibit the ages of the victims in a tabular form at the foot of this paper.

In the treatment of this epidemic many and opposite modes have been pursued. Astringents, sedatives, and the more strictly antiphlogistic system, have each had a trial; and, as might have been expected, specifics have, in not a few instances, been looked for, and said to be found; but I apprehend that it will be nearer the truth to admit that, in most cases, (that is, those amounting to dysentery,) the disease held on a certain course, the symptoms only being mitigated by the treatment adopted.

Astringents have been largely tried, and if not injurious they certainly did not expedite the cure; when given in simple cases of diarrhœa in the very onset, and followed by the strictest attention on the part of the patient to diet, confinement, &c., they were not unfrequently successful.

The treatment by opium and its salts has been, perhaps, that most frequently had recourse to, and this probably as much because the practitioner had observed the tendency of the disease to run a certain course, as from the relief it afforded to the sufferings of the patient. To one who had been ill many days, passing very dark and horribly offensive stools, full of shreds of membrane, with a raw, red tongue, small, frequent pulse, and excruciating pain over the whole abdomen, I gave first three, and afterwards two grains of solid opium every second hour, with great benefit; all the symptoms improved, and this patient, as bad or worse than any I have seen, will, I think, eventually recover.

The acetate of lead has been frequently and largely exhibited both by the mouth and injected into the rectum, and, undoubtedly, in many cases with much relief: but wherever I have prescribed it, I have rather attributed its beneficial operation to its sedative than astringent powers; the frequency of the calls to stool was much lessened, but I always found that after its use, very large and dark evacuations took place. It seemed to me to allay the irritability of the muscular coat of the intestines, and thus to allow of their retaining the secretions poured into them, not to lessen or restrain the secretion or exudation of the fluids.

Mercury, to produce its specific effects, has not been much used, and contradictory estimates of its powers have been formed. Dr. Kinglake informs me that it is the only remedy which has appeared to him to modify, or in any way affect the course of the disease; while another practioner says that he has carried it to salivation in two cases without benefit. I have only given it in small doses where I suspected derangement of function in the liver.

The treatment which I have myself pursued has had a strict reference to what I believed to be the pathological condition of the parts concerned, determination of blood to the mucous membrane, and not seldom inflammation, and I have not been disappointed in the result. In the slighter cases, confinement to bed, small opiates, with ipecacuanha, and occasional laxatives, castor oil, with a few drops of laudanum, and the lighther food, were all that was required; when there was fixed pain, leeches and blisters were applied; but wherever the symptoms from their violence indicated, blood was taken from the arm, which, both in my experience and in that of others, was always buffed. For the relief of the violent paroxysms of pain, which often assumed a cholicky character, sinapisms or turpentine epithems were very successful. Anodyne enematha did not, in my experience, afford that relief I expected.

I cannot conclude, without expressing my thanks to my medical brethren here for the readiness with which they have imparted to me their observations on this epidemic, and for their testimony that the above sketch coincides with their experience.

Tabular Form of Ages of the Victims.

Under	2 years of Age	-	21
„	5	„	- 14
„	10	„	- 6
			41

Between	10 and 20	8
„	20 and 60	6
Above	60	17
		31

I am, Sir,
Your obedient Servant,
T Woodforde,
Physician to the Taunton and Somerset Hospital.

Taunton, September 4th,
1837.

CLINICAL REPORTS.

EDINBURGH INFIRMARY.

MERCURIAL DISEASE.

M. R., is the wife of a looking-glass maker, whose duty it is to "silver" the mirrors, as it is called, with mercury. Her father's trade is the same, and from her earliest years she has been accustomed to assist in the business. Four years ago, after sleeping in a damp bed, she was attacked with pain in the head, back, and all the large joints; but the only parts in which they are now felt are the knees and legs, where their severity is very great, but is not increased on pressure or motion. Various remedies have been tried without benefit For the last twelve nights she has taken every night an opiate draught, together with a quantity of spirits, amounting latterly to several glasses. This practice has much injured her stomach, and she is now troubled with nausea, vomiting, flatulence, pyrosis, anorexia, and other symptoms of indigestion. On the head, shoulders, and legs are the cicatrices of ulcers, which broke out six years ago, and continued open for two years. On the forehead are two or three prominences, which feel soft to the touch. She has constantly a bad taste in the mouth; her teeth are rather black, and the salivary secretion is sometimes increased, but never to any great extent. The gums are sound, and were only once sore from some pills which were prescribed while the ulcers remained open.

This patient stayed in the hospital only ten days. The treatment consisted of a warm bath every other night, a pint of compound decoction of sarsaparilla daily, a scruple of Dover's powder every night; slight perspiration was produced; the pains were somewhat alleviated, but she went out of her own accord, not materially relieved.

Clinical Remarks by the attending Physician.

This patient has been exposed to the fumes of mercury, by which her health has become affected, and her bones diseased. The prognosis is very bad. She has cough, and though she has no other symptom of phthisis, we fear it is commencing. It is very apt to occur in such cases. She has dyspnœa, but only occasionally. It is of an asthmatic nature, and we meet it, when it occurs, with an antispasmodic. The pains follow the course of the long bones, on which irregularities are felt. One of the tumours on the forehead has burst, and the bone is felt to be rough at the bottom of the wound. In the manufactory in which she has worked, two other persons are similarly affected, and in other manufactories many more. Whether the ulcers which burst out six years ago were mercurial it is not possible to say, but as they were very numerous it is probable they arose from the constitution being diseased; and such a constitution may unquestionably be produced by mercury, as is seen when it is used for the cure of other diseases. These ulcers were very obstinate, for they continued open for two years, which is another proof of a bad constitution. Some people think they cannot take too much mercury for syphilis, and they continue it too long, which is very apt to give rise to an affection of the bones. But this is widely different from banishing mercury altogether. Before it came into uses syphilis robbed many people of their noses. In the case before us disease did not take place till the patient caught cold from a damp bed. Without this primary cause the secondary cause (the injury which the constitution had sustained from the mercury,) would not have been sufficient. If similar combinations of causes were taken into account in disputes it would draw the teeth of medical acrimony. Some, for instance, affirm that certain diseases are contagious, others that they are not. I believe that they are so sometimes, and that a predisposition is necessary to their being communicated. Cases of small pox frequently occur which we cannot trace to exposure to the virus, but we do not doubt that such exposure has really taken place.

A humour was found in the neck, which I thought might be connected with the disease of the scalp. I therefore ordered the head to be shaved, and it was found to be covered with small tumours. From

these matter had been absorbed, and had given rise to swelling of the glands in the neck. I fear the bones of the head are hopelessly affected. We are giving sarsaparilla and nitric acid, both of which are recommended for disease of the bones, and likewise for syphilis. The pain and frequent attacks of dyspnœa we relieve by opiates. She was too fond of the latter before admission, and washed them down with whiskey, though she has not the appearance of a dissipated character. Last night she was seized with so severe an attack of difficulty of breathing, that the surgeon was sent for to perform tracheotomy. He did not think it proper, however, to do so, and no doubt he was right, for the dyspnœa in this case is not produced by a cause which demands that operation. Where organic disease exists of a nature to interfere with respiration, the patients are liable to spasmodic attacks, and then we must not trust to their going off spontaneously, for in two such cases the patients died suddenly, when they might have been saved by tracheotomy.

We have given diaphoretics to determine to the skin, but we have not a mere febrile state of a general nature to deal with, for there is evident determination to the chest. We have applied leeches, and are now trying tartar emetic ointment, which is a form of issue. Before I resorted to this ointment I used to apply repeated blisters in such cases, for I prefer them to issues. I have here no hope, however, of curing the lungs. Tubercles probably are already formed, from repeated inflammatory attacks, and these attacks were probably occasioned by tubercles already existing.

MADRAS NATIVE INFIRMARY.

Communicated by W. Rose, Esq., Assistant Surgeon to the Madras Army.

My dear Sir,—To the kindness of my friend Mr. Lawder, who always feels sincere pleasure in communicating to the Junior Medical Officers of the army, the results of his long and scientific career, I am indebted for extracting, from the Records of the Madras Native Infirmary, this and several other cases equally interesting, which I shall feel much pleasure in forwarding to you from time to time.

With the case I send you a preparation of about ten inches of the ileum, which you will find perfectly filled with lumbrici, I have the honour to remain,

My dear Sir,

Yours very truly,

W. Rose.

[We have received the preparation from our valued correspondent, M. Rose, and consider it a very valuable one. We are also much indebted to him for his instructive clinical reports, which are ably drawn up, and show Mr. Lawder to be a most judicious and scientific practitioner. Mr. Rose is also entitled to much praise for his transcription of the cases, as well as for his original reports, which we shall publish.]

TETANUS FROM WORMS.

Pungan, native of Madras, aged fourteen, of a thin spare habit of body, was admitted into the Native Infirmary, under the care of J. Lawder, Esq., Surgeon to that institution, at two o'clock, P.M., on the 15th June, 1835, complaining of severe griping pains in the abdomen, accompanied by very frequent and spasmodic contractions of the muscles of the lower extremities, which rendered them so extremely rigid that flexion of the joints was impossible. He lay with his legs extended, the abdomen was very tense, and presented a considerable convexity; the spine much incurvated during the paroxysm; the whole weight of the body supported by the occiput and heels, exhibiting a strongly marked case of *Opisthotonos;* so much so, as to leave considerable space between his back and the bed. The spasmodic contractions of the muscles of the upper part of the trunk were very severe, particularly those of the jaws, which were firmly closed. However, as soon as the paroxysm subsided, he could immediately open his mouth, and the temporal, masseter and buccinator muscles were before very rigid and tense, now became perfectly relaxed and natural. Tongue white and furred; thirst urgent; constant sickness of stomach; bowels obstinately constipated for the last fourteen or fifteen days; urine scanty and high coloured; skin hot and clammy; respiration hurried; pulse frequent and small.

The previous history of the case could not be satisfactorily collected from the parents, but from what I could ascertain, this poor lad had been gradually pining away for some months; the paroxysms, which were at first rare and mild, have latterly become frequent and much more severe, and the abdomen has been for several days tense and painful.

From these symptoms, and more especially from the relaxation of the muscles of the jaws during the intervals of the paroxysms, from the long time that elapsed between the commencement of his illness and his admission into the hospital, from the absence of that violently shooting pain from the Ensiform cartilage to the spine, indicating the spasmodic contraction of the diaphragm, which invariably attends idiopathic tetanus, from the absence of that peculiar perspiration, which is generally present in true locked-jaw; and from having before observed one or two similar cases since I have been placed in charge of this hospital, I am led to think that this is not a case of genuine tetanus, although represented to me as such; on the contrary, I suspect very strongly, that worms in the intestinal canal is the sole cause of this disturbance.

Olei Ricini.

——Terebinthinæ āā ʒ ss.

Aq. m. pip, ʒi. m. ft haustus statim sumendus.

Capeat quoqne enema purgans omni hora cum spiritus terebintinæ ʒvj.

5, P. M.—Paroxysms frequent and severe, other symptoms as before.—Rep. medicamenta.

7. P.M.—Bowels slightly acted on—spasms continue frequent and severe, with intermissions which last but for a very short period.

Tinct. opii. m. l.

Aq. ment. pip. ʒss. m ft haustus omni hora repetendus nisi stupor superveniat.

16th, 7, A.M.—Bowels opened during the night; a quantity of slimy mucus appears in the evacuations, which is an additional proof of the existence of worms; slept a little; spasms continue the same.

Rep. haustus and enemata—et peroptime infricetur abdomini Linimentum infra prescriptum.

Ung. hyd fortioris,

Tinct opii, āā ʒss. m.

11 o'clock, P.M.—Continues in the same state; bowels opened by the medicines; some indurated fæces together with slimy mucus appear in the evacuation.—Rep. med.

Half-past 12, P.M.—Spasms continue and increase in frequency; countenance ghastly; eyes sunk and hollowed; intervals between paroxysms very short; bowels opened twice; evacuations same as before. During the visit a violent paroxysm came on, which attacked the muscles of the entire frame, and lasted but a short time, nature sinking in the struggle, and death relieved the unfortunate boy from his sufferings.

Autopsy six hours after death.

Limbs much wasted; abdomen very tense; the arched form of the back very apparent; muscles exceedingly rigid, and on cutting through the common integuments, appeared more florid than usual; the small intestines presented a very peculiar appearance, and were arranged in several longitudinal folds, with slight indentations between them, and communicated to the finger a sensation as if they were filled with small cords. On slitting open a portion of the jejunum, it was found actually distended with lumbrici coiled together several of which were six, seven, and eight inches long, and filled up the whole length of the small intestines so completely as to render it impossible for anything to pass except fluids, which were actually filtered through them.

The natural contraction of the intestine only tended to produce a greater impediment to their passage by forcing them downwards one against the other, and then producing a mechanical obstruction to their expulsion. This was particularly observed at the valve of the colon, through which I endeavoured to force some of the worms, but failed in the attempt, showing to a demonstration that no medicine could have accomplished their evacuation per anum.

The large intestines were in a collapsed state.

This is a case of peculiar interest, proving how readily a disease of this kind might be confounded with true or idiopathic tetanus.

J. Lawder.

The London Medical

AND

Surgical Journal.

Saturday, September 16th. 1837.

INFLUENCE OF THE MEDICAL PRESS.

The lives of public men, even the most virtuous and the most exalted, are not exmpt from censure, neither do they escape the voice of calumny or reproach: this is

he boon to which they must submit, and the man who voluntarily exhibits himself before the public, whatever be his calling, or he who becomes a servant of that public, may glut his ambition, or gratify his vanity; but he must also be fully aware that he cannot, at the same time, avoid public censure. It is from this freedom permitted and sanctioned in the discussion of the characters of public men that the "Liberty of the Press" has had the happiest influence on society, upholding what is praise-worthy and what is good, exposing and condemning what is base, unprincipled, and corrupt.

The Press has been a powerful engine, and it is not to be wondered at that the public journals have been, and ever will be, the objects of terror and of hate to those individuals whose public conduct will not endure the light of truth. Our Houses of Parliament, our Courts of Justice, daily exhibit the salutary influence of public animadversion on the conduct of members of those bodies; and it is impossible to deny the beneficial influence which censure, especially that which emanates from the press, has on the conduct of public men, especially those in the atmosphere of political life, where the most hideous and selfish passions of human nature are so much excited. With this "freedom of the press," and with its well known influence in this country on men in all departments of public life, it appears almost paradoxical that it is only of late years the conduct of those members of the medical profession, who hold official situations in our public charities, should never have been the subject of public animadversion, until the publication of the *Lancet*. Before that memorable epoch, surgeons and physicians of our hospitals might not only have been guilty of gross neglect of duty, but experiments might have been made on any number of the sick poor, and which might have been even the cause of death, without the slightest notice being taken of such conduct by the governors of these charities. There were then no Courts of Conscience, no Courts of Justice, no 'Guardians of the Poor," no Committee of Governors to protect the sick against the most monstrous abuses. Since the interests, comforts, and even the lives of the sick poor, and the portal of our public hospitals have been guarded and protected by all the vigilance of a literary Argus, not only have some of the most formidable abuses been remedied, but an incalculable benefit has arisen to medical science by the junior branches of the profession being enabled to profit by the errors and blunders of their seniors. So much so indeed have the changes in the discipline of our metropolitan hospitals been within these few years, that a student of the present generation would scarcely credit any account, however faithfully narrated, of what the charitable institutions of the metropolis were thirty years ago.

We have been led to make these remarks in consequence of the proceedings which are now taking place at the North London Hospital, a Committee of the Professors of University College being occupied in the investigation of a case which not only deeply involves the interest of that school of medicine, but which involves the honour and integrity of one or other members of that body, as well as our veracity as editors of a public journal.

In a former number we gave an account of an operation of Lithotrity, which was performed by Mr. Liston, on Monday the 26th of June last, the patient having been admitted only on the preceding Saturday; the short time allotted for the necessary preparation of the patient, urg-

ing us to point out, especially to the junior members of the profession, the great danger of operations when a careful and protracted system of previous treatment had been neglected. We also stated, that the percussor entered with a sudden *jerk*—that two stones were found in the bladder, which were broken down, and only small portions removed,—and it has since been proved, that the fluid which was injected into the bladder to facilitate the operation, did not make its exit by the urethra. We further stated that the patient died on the fourth day after this operation—that the dissection of the body, contrary to the established rule of the hospital, was performed *privately*, and the contents of the pelvis were removed, by Mr. Liston's special directions, to his private dwelling. Whatever opinions may have been entertained of the death of the unfortunate patient, and whatever murmurs and whispers may have been made by the students, in their anxiety to know the real cause of the patient's death, and the appearances on dissection. yet day passed away after day, and week after week, without the slightest notice of this highly important case having been taken by that Journal where the puffings of Mr. Liston have always found a ready welcome, until Mr. Liston delivered a Clinical Lecture on the 19th day of August, the operation having been performed on the 26th of June, an abstract of which was sent by him to the *Lancet*, and published in that Journal, having for its title "LITHOTRITY—MISMANAGEMENT WITH A CATHETER—DEATH." The account of the case published in the *Lancet*, and the account given by Mr. Liston in his Clinical Lecture, give such a very different statement of the circumstances connected with this operation and subsequent history of the case, that in order that our readers might form a just estimate of the conflicting ments, we ventured to copy from the Lancet Mr. Liston's own words.

The imputation which Mr. Liston's statement contains on the character of the student who had been acting as House-Surgeon, did not fail to excite the attention of the members of University College as well as the medical officers of the Hospital, and we have much satisfaction in stating, that they have considered it their duty to institute an inquiry, and endeavour to ascertain by an impartial examination of evidence, all the facts connected with this mysterious affair.

We will not farther allude to the important truths which have been ellicited by the examination of the different witnesses, though the minutes of the committee are open to public examination. But in justice to the individual for the protection of whose character the Committee especially met, as well as for the reputation of their College, we shall merely state that our account of the operation has been proved by that evidence to be in every respect correct, and that the Crmmittee have compelled Mr. Liston not only to produce the preparation before them, but they have also claimed it as the property of the Hospital.

We stated in our Number for August 19th that we should refute Mr. Liston's calumnious attack on the veracity of our report, and we might have done so at the moment, had we not thought it wiser to allow the Committe of the Hospital to do so and spare us a disagreeable duty. We now leave him to his own reflections on the matter; but beg to assure him, that fearless of his attacks in his clinical lectures for recording truth, we shall continue to publish his unfavourable as well as favourable cases, just as we do those of every other hospital surgeon in London, as examples of the present state of

operative surgery in this metropolis both for the instruction of our junior readers, and the edification and admiration of all surgeons both at home and abroad.

The liberty of the medical press, shall not, so far as we are concerned, be controulled by Mr. Liston or any one else.

REVIEW.

Histoire Des Maladies Observées A la Grande Armée Francaise, Pendant les Campagnes De Russie en 1812 *et D'Allemagne en* 1813. Par le Chevalier J. R. S. De Kerckhove. Anvers, 1835. History of the Diseases observed in the Great Army of France in Russian and German Campaigns of 1812 and 1813.

The work of which we here present a sketch to our readers, is from the pen of De Kerchove, or De Kirchoff, who held one of the highest and most responsible appointments in the Medical Staff of the French Army, under Napoleon. Its object is to detail the history of those diseases which prevailed in the great army of France during the campaigns of Russia in 1812, and of Germany in 1813. The favourable reception it met, and the high character of the book, are fully attested by the fact of its having run through three editions. The author has divided the work into two parts; the first containing general considerations both of a historical and medical character, and a fund of information of a most interesting description, relative to events which have exercised the most powerful influence over the destinies of Europe, and have produced changes of the most extraordinary and unexpected character in the moral, physical, and political state of the principal kingdoms of the civilized world. In this part of the work the reader will find a most satisfactory account of the commencement, progress, and melancholy termination of the disastrous expedition to Russia, "which contributed to hurl that man of prodigies, Napoleon, from a throne attained with too much bloodshed, sustained with so much glory, and forfeited through so much infatuation, a degree of infatuation so glaring and so palpable that, to the dispassionate and cool reflector, it now appears to have been actually infused through the immediate intervention of Divine Providence itself, justly incensed at the outrageous and wanton sacrifice of human life which this extraordinary man hesitated not to make for the purpose of indulging and gratifying that inordinate and all-grasping ambition which, not satisfied with so many and so sanguinary victories over his fellow-creatures, aspired to the terrific undertaking of warring against the very elements, and which ultimately overwhelmed him, "when the meteor of conquest allured him too far."

The author's chief aim is to render himself useful to his professional brethren by detailing the most important observations collected by him during this disastrous war, a war which equals the most surprising and extraordinary expeditions of antiquity.

He set out from Mayence on the 6th of March, 1812, as Army-physician attached to head quarters. When he arrived at Posen, he was sent as physician to the head-quarters of the third corps, commanded by Marshal Ney; with this corps he entered Moscow on the 14th of September of the same year, and left that place, with the same corps, on the 19th of the following month.

On his return to Berlin in the commencement of February, 1813, the third corps being disorganized, he again entered head-quarters. On the 4th of June he received another appointment at Gortz, being attached as physician to the head-quarters of the second corps, under the command of Marshal Victor, which he joined at Grunby, in Silesia. With this corps he re-passed the Rhine after the battle of Hanhan, and quitted it at Mayence, to take the hospitals of this place in charge. From this active service we must be inclined to receive with more confidence the communications and observations contained in his work, than if they were the mere reveries of speculation in the closet. The author states that in presenting to the public in this work the result of the experience obtained by him in the field of battle as well as in the hospitals, his chief care is to draw up his cases and remarks with zeal and fidelity. He also makes a statement to the justice and importance of which every practical physician will readily subscribe, namely, that the medical practitioners should profit as well by his errors as by his success; and should as near as possible conform to the precept given by Baglivi:—*Neque ab antiquis, neque a novis sed ubi veritatem colunt et sequor.*

"The medicine, or clinical medicine, of observation is," he says, "the true medicine; the more we deviate from the rout traced by the fathers of medicine, the more liable are we to fall into error. Zimmermann was right in saying that medicine took its rise from observation, that it is observation which conducts it to perfection, and that it is for the want of it, that it is sometimes nothing but a mere unmeaning jargon. To proceed successfully in practice, we should not lose sight of the physical and moral constitution of the patient; we should direct attention to the character, course, and causes of the disease; we should assist nature instead of wishing to direct her. Fortunate it is, if soundness of judgment and simplicity of method direct the therapeutic means of the physician. We should adhere to those principles, the correctness of which is immoveable, and be upon our guard against the spirit of system. Nor should we be led away by the fascinations of novelty, nor abandon ourselves to the enthusiasm which such novelty so readily gives rise to, and which accounts for the ardour with which every new theory, however absurd it may be, is generally received by so many proselytes. Nor should we be the blind followers of those systems engendered by an excited imagination, but should always hold in remembrance the maxim of one of our great masters in the art of healing, *ars medica tota in observationibus.*"

Our author gives a caution here applicable in all countries, and of which all medical practitioners would do well to profit by, namely, not to imitate the example of those physicians who have a medicine for every symptom, and vary their prescriptions every hour in the day, and also to beware of the practice of those who, without paying any regard to climate, and without establishing distinctions between diseases, sexes, ages, temperaments, and constitutions, adapt their treatment to some particular routine system which may be in vogue at the time; whilst others again begin the treatment of every disease indiscriminately by giving an emetic or purgative mixture, followed by some enemas, under the ridiculous pretext of *clearing out the body.* "It is," says our author, "to such practitioners, who have but one treatment for all diseases, that the satirical descriptions of Pliny, Moliere, Rousseau, &c., will justly apply, not to the genuine physician, initiated in the sanctuary of Epidaurus, and capable of studying the mysteries of nature." I have invariably perceived," continues our author, "and it cannot be repeated too often, that to see medicine shine with *eclat* and with all its advantages, we must, by carefully investigating the constitution of the patient, the causes, nature of the attack, character, and progress of the disease, aim at simplicity in the treatment. Nothing is so true as the assertion, that by going through the hospitals we are sure to find most success in those, where the practitioners, studying nature in diseases, adhere to simplicity in their prescriptions. . . . The physicians should place hygienic means in the first rank, and not forget that in many cases, particularly in fevers, prudent expectation often succeeds better than the employment of drugs, as most frequently the cure is the work of nature. This assertion is sufficiently proved by the frequent example of the poor and destitute, who recover without doing any thing, and that in the midst of circumstances the most unfavourable." Whilst we are ready to go a certain length with our author in these views, and to agree with him to a certain extent with respect to the advantages to be derived from observing simplicity in the treatment of disease, we would not be understood to advocate indiscriminately the method of expectation in the practice of medicine. We know full well that the sthenic and active diseases of our climate, as well as the habits and robust constitutions of the people, would by no means admit of it. In concluding the introductory part of his work our author wishes it to be understood that, in maintaining that the medicine of observation is the true method, he has not the least intention of denying or disparaging the utility of the sciences with which the healing art is connected, and which are tributary or ancillary to it; it is, he acknowledges, absolutely necessary to cultivate them in order to observe with advantage, as they assist us in accounting for the phenomena which present themselves in the nature of man, and they serve as a guide to conduct us through the darkness of therapeutics. It is necessary that the physician should establish the basis of his experience and observation on the knowledge of anatomy, physiology, chemistry, materia medica, and pathology. However, he says, whatever be the relations of medicine properly so called, with the different sciences connected with the knowledge of man; whatever be the aid which it borrows from the sciences with which it communicates; whatever be the lights which it may have

obtained, or may now obtain from them, it will still be certain that practical medicine rests essentially on the direct observation of diseases.

We shall not attempt to follow our author through the first part of his work. which is far more adapted to historical detail than medical analysis. We shall therefore proceed forthwith to the second part, which treats of *Disease*; and first, of what our author calls (Chap. i.,) *embarras gastrique*. This was a very frequent affection in the French army, owing to the coarse and bad quality of the food, and to the irregular manner in which the army was fed. It presented in general the following symptoms——loss of appetite; lassitude, and sometimes wandering pains in the limbs; a feeling of general illness; a feeling of constriction or of pain in the precordial region; head-ache, more or less severe; bitter taste in the mouth; tongue covered with a whitish or yellowish coat of mucus; borborygmi and flatulence; nausea, sometimes vomiting, sometimes diarrhœa, colic, and tension of the abdomen: this gastric disturbance was connected with a more or less marked affection of the liver; the tongue was then covered with a greenish-yellow coat, and the patient had bilious vomiting. This gastric disturbance was considered as an accumulation of saburral matters in the stomach; but it would now be regarded as an irritation of the gastric mucous membrane, and the head-ache and affection of the liver which accompanied it would be regarded as the result of the sympathetic transmission of this irritation to the suffering organs.—*Treatment*. Tartar emetic, so useful more particularly in treating the diseases of soldiers who are so liable to use coarse and unhealthy food, was the principal remedy employed with the view of evacuating the *primæ viæ*. Nothing appeared so essential as clearing the stomach of the alimentary or other matters which it might contain. If this treatment were neglected, diarrhœas and bilious fevers were observed to follow in a great number of cases, or else the duration of the gastric disturbance was prolonged to an indefinite period. Our author observed as a general fact that when the gastric affection was not accompanied with redness at the edges of the tongue, or with red points, we must have recourse to the employment of emetics, powerful remedies when seasonably administered. He remarks here, that the use of tartar emetic has been too much neglected of late years. He considers that it deserves to hold a very high rank in the materia medica from its great utility in many diseases. When the system is assailed by morbific causes, the stomach is frequently the first to feel it; it becomes disturbed in its action, whilst the appetite still more or less continues; the alimentary matters then used not undergoing the natural change of digestion, it becomes necessary to evacuate them, otherwise they produce a local irritation which destroys that equilibrium between the functions so necessary to the existence of health; and the more this equilibrium is interfered with the more serious are the diseases which arise from it. Sydenham states that he has frequently observed that at the termination of acute diseases diarrhœas come on from the omission of tartar emetic; and the authority of this great master of medical observation is well deserving of consideration. Sometimes, however, after the action of the emetic, when the gastric disturbance still continued and seemed to depend on irritation of the liver, our author administered purgatives, such as senna, rhubarb, manna, sulphate of magnesia, &c., from which he always obtained good effects when the irritation of the liver was slight or chronic; this is accounted for by the derivative and stimulant effects of purgatives on the intestinal mucous membrane. If after the employment of tartar emetic there was observed any appearance of exhaustion or sinking of the vital powers, he put the patient on nourishing diet, such however as was easy of digestion, and also administered bitters combined with aromatics.

Chap. II. *Gastritis*. Inflammation of the stomach holds at present a very high place in the nosological cadre scale With the exception of Morgagni and Hoffman, the old physicians from not sufficiently appreciating the important office of the stomach in the animal economy, paid but little attention to it. This inflammation when acute was generally confounded by them with other abdominal inflammations, and when chronic was altogether overlooked by them. But at the present day physicians devote themselves more to the study of pathological anatomy, which has given them more accurate notions with respect to the seat of diseases. It is to these, and chiefly to M. Broussais, that we are indebted for our more intimate acquaintance with its nature and diagnosis.

Our author feels satisfied that gastritis acted the most considerable part in the production of several diseases which prevailed among the French troops; the mor-

bific causes to which the soldier was exposed rendered this opinion extremely possible; but at the period of Napoleon's wars gastritis received but little attention from medical men. The symptoms of gastritis are—Fixed pain: burning heat; weight or tension in the precordial region; sensation of fulness in the stomach; increase of epigastric sensibility on pressure, or on the injection of food, drink, or medicines; wandering pains between the shoulders or under the sternum; headache, dizziness, lassitude in the limbs; sudden sinking of the vital powers; trembling; faintings; cold of the extremities; increased dry heat in the epigastrium and on the forehead; alteration in the features; oftentimes fever, more or less marked; cold sweat; pulse small, hurried and contracted, oftentimes unequal, sometimes intermittent, seldom hard; dryness of the mouth and throat, in which the patient sometimes experiences a sensation of burning; great thirst, desire of cold and acidulated drinks; anorexia, or sometimes an increase of appetite; sour eructatious; disposition to vomit, or actual vomiting; the stomach rejects everything the patient swallows; constipation; urine red, concentrated, and scalding, often diminished and occasionally suppressed; breathing more or less difficult; restlessness, anxiety, &c. These symptoms are developed in proportion to the intensity of the disease and the individual habit of the patient; but it should be remarked that in the most severe gastritis the sensibility is as it were abolished; that the pain is little or not at all felt, and that the pulse becomes slow and almost imperceptible. When it has attained an extreme degree, it is often accompanied with spasmodic contraction, extinction of the voice, hiccup, delirium, and other cerebral phenomena. It may be observed that redness and retraction of the tongue, or redness of the apex and edges of this organ, symptoms generally considered as pathognomonic of inflammation of the stomach, do not always exist in this disease. There have been cases of gastritis, when the tongue was entirely pale, and presented no change, except that it was covered with a mucous coat.

The combination or co-existence of all these symptoms is not necessary to constitute gastritis. The author adopts M. Broussais division of the disease into two species, the phlegmonous, and erythematous or erysipelatous, the former being that wherein the entire substance of the organ was involved, and the latter being that which has its seat in the gastric mucous membrane.

Gastritis may attack the entire stomach, or affect it only partially. It may be idiopathic or symptomatic. It is usually communicated to the small intestine, and this pathological state is now called gastro-enterite. It may be transmitted sympathetically to the liver, and so excite hepatitis and jaundice; to the bladder, to the lung, to the mucous membrane of the pharynx and larynx, to the eyes, to the brain, &c.. and to give rise to inflammation of these several organs.

The author after this very graphic description of the symptoms of gastritis, next passes on to the causes which, under ordinary circumstances, may excite it; the detail of which we shall not here present to the reader, as, though excellent, it contains nothing very particular in it. With respect to the particular causes which occasioned gastritis in the French army at this period, he enumerates them as follows: privations, fatigue, sudden transitions from the heat of the day to the cool of the night; icy cold drinks taken when the body was bathed in sweat; the burning thirst which was suffered for want of water; the gross food and irregular manner in which the soldiers were fed; the abuse of spirituous liquors and the indigestible or unhealthy food they used, and that after having been for a long time fasting, often at a time when they were worn out with fatigue, hunger, heat, and cold. After detailing the prognosis and several terminations of the disease, in which, however, there is nothing very uncommon, he proceeds to the

Treatment.—The first indication is to destroy the causes of the disease. If the presence of acrid substances in the stomach be suspected they should be discharged as soon as possible, vomiting being excited by some mild tepid drink. Warm water with butter, oil or fat, are adapted to this purpose. If the disease be occasioned by poisoning, the treatment is obvious.

In cases of gastric distention caused by coarse bad food taken by the soldiers, our author found advantage from emetics of ipecacuanha; after this, some days rest and attention to diet, keeping up freedom of the bowels by lavements, demulcent drinks, and sometimes derivatives applied externally, sufficed to perfect the cure in several cases observed in the French army, in which it was not necessary nor expedient to have recourse to bleeding, except rarely and with extreme caution.

When the inflammation was well established and severe, local bleeding by means of leeches to the epigastrium was employed. If the inflammatory action was very violent, it was found necessary to have recourse to general bleeding. The bleeding should be adapted to the age and constitution of the patient. The physician should not allow himself to be imposed on by the weakness or smallness of the pulse, as it generally becomes full after bleeding.

When the pulse sinks very much, it is necessary, before taking blood to endeavour to excite reaction by a moderately warm bath, by frictions to the surface of the body, by the application of sinapisms to the extremities, &c.

After leeching, constipation should be removed by means of lavements. The epigastric region should be covered with emollient cataplasms. Warm pediluvia rendered irritating by means of salt or some other substance; hot cataplasms spread over with mustard, if the re-action is not strong, should be applied to the extremities, as also blisters or sinapisms to parts remote from the seat of the disease, as along the back or to the thighs, provided, however, there be not a state of general irritation: the patient should be restricted to the use of cold mucilaginous drinks. After the disappearance of the fever, and of the acute stage of inflammation, purgative lavements should be employed so as to produce derivation to the large intestine.

After the disease has lost its acute character, there frequently remains great sensibility of the stomach, which occasions pain and vomiting at intervals. Narcotics, improper at the commencement, are then indicated. They should at first be given in very small doses, nor should the dose be augmented unless with great caution. The author preferred, in such cases, the external application of narcotics, namely, gentle frictions over the præcordial region with the watery extract or tincture of opium, or with the extract of stramonium, or belladonna. He sometimes used poppy-lavements, sometimes mucilaginous lavements, with some drops of tincture of opium, more especially should the patient labour under exhausting diarrhœa. The author makes an observation here with respect to the comparative strength of opium administered internally and externally, namely, that in an equal dose it acts more powerfully when given in lavement than internally. We believe that it was the late Baron Dupuytren who first remarked this fact; and if we remember aright, the reason assigned by that distinguished physiologist for the effect was, that when the substance was administered in lavement, it was not within the limits of that part of the canal endowed with digestive faculties, and consequently all elements were taken into the system whole and entire.

Here we shall pause for the present, and resume our analysis in next number. in the mean time we have given ample evidence of this most interesting and instructive volume. The author is evidently possessed of a profound knowledge of medicine, and is a physician of great practical experience and judgment. His work is destined to become classic, and will be one of reference and authority.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Liverpool—Monday Night.

The seventh annual meeting of this association commenced here this morning. Every necessary arrangement to promote the comfort and convenience of the members visiting Liverpool has been adopted by the Local Committee. The various institutions, public, commercial, and other buildings, manufactories, &c., and everything worthy the inspection of the curious, have been thrown open for gratuitous inspection.

Among the distinguished visitors already arrived, or immediately expected, are—Prince Esterhazy, the Marquis of Northampton, president of the association, and the Earl of Burlington, president-elect, Lord Nugent, M. Gay Lussac, M. Fresnel, jun., Earl Fitzwilliam, Lord Milton, Hon. Mr. Fitzwilliam, Lord de Tabley, Sir B. Taylor, Sir P. G. Egerton, M.P., Earl Balcarras, Viscount Sandon, M. P., Viscount Cole, M.P., Marquis of Downshire, Earl Howe, Lord Radstock, Earl of Leitrim, Lord Bloomfield, Viscount Lismore, Marquis of Westminster, Lord Curzon, Earl of Charlemont, Earl of Glengall, Earl of Ormond, M. de Vernueuil, M. Dufresnoy, Baron Dupin, Professor de la Revé, Professor Leisbigh, Joseph Scholefield, Esq., M.P., Mr. Guest, M.P., Sir H. Watson, Col. Hull, Col. Sandworth, Professor Faraday, Professor Powell, Professor Whewell, Mr. Jerdon (editor of the *Literary Gazette*), Mr. De la Beche,

Mr. Dolland, Sir Thomas Brisbane, Sir David Brewster, Sir Wm. Hamilton (astronomer royal of Ireland), Sir W. Hooker (professor of Botany in the University of Glasgow), Dr. Lloyd (provost of Trinity College, Dublin), Professor Buckland, Professor Peacock, Messrs. Wield and Bryan (secretaries of the Royal Dublin Society), Dr. Orpen, Dr. Apjohn, Sir R. Bateson, Mr. Kingsley, Dr. Evanson, Mr. Verstraete, Mr. Cooper, M.P., Captain H. Vernon, Hon. A. Trevor, M.P., William Fielding, Esq., M.P., Professor Henslow, Professor Miller, Professor Johnston, Professor Daniel, Professor Graham, Sir O. Mosley, E. Fleetwood, Esq., M.P., Sir J. Riddle, Bart., Dr. W. C, Taylor, Dr. Lardner, Dr. J. Johnstone (Birmingham). Dr. Granville (author of the "Spas of Germany"), Dr. Roberts (St. Asaph), Dr. Warren (Boston), Dr. Holland (Sheffield), Dr. Copeland (author of the "Dictionary of Medicine"), Mr. S. Hare (Leeds), Mr. W. Walker (Edinburgh), Mr. Brett, F.R.S., Dr. Carlisle, Dr. Rees, Dr. J. Black, Dr. John Reid, Dr. O'Beirne, Mr. J. G. Simpson, Dr. P. H. Madden, Colonel Sykes, Mr. Porter, Mr. Ashworth, Mr. W. Greg, Mr. Remington, Mr. Kingsley, Mr. Russell, Mr. Henwood, Mr Hawkins, Mr. Williams, Mr. J. W. Lubbock, Mr. Burt, Colonel Gold, Mr. Cunningham, Mr. Osler, Mr. Golding Bird, Mr, R. Kane (Dublin), Mr. Geo. Crane, Professor Sedgwick, Dr. Traill, Mr. Gray, Rev. J. Reade, Rev. J. Hope, Mr. J. Ball, Mr. Wheatstone, Mr. Delwyne, Mr. Llewellyn, Mr. Bateman, Mr. Fannin, Dr. Pollexfen, Major Williams, Major Clerke, Mr. Ashburne, Mr. Darthex, Dr. Carmichael, Mr. Lyne, M. Capdevielle, Mr. Bovill, Mr. Crane, Mr. Graham Hutchinson, Sir John Hilton, Mr. Franks, Mr. Pemberton, Mr. J. Luke, C.E., General Brown Clayton, Mr. R. E. Drunsend, Mr. Solomon, Mr. Cotton, Dr. Williams, Colonel Farquharson, Mr. Dixon, Mr. Mongomery Martin, &c.

The various sections were allocated according to the following plan. The arrangements were efficient and satisfactory :—

A. Mathematics and Physics—Mechanics' Institute.

B. Chemistry and Mineralogy—Ditto.

C. Geology and Geography—Ditto.

D. Zoology and Botany—Royal Institution.

E. Medical Science—Medical Institution.

F. Statistics—Saving's Bank.

G. Mechanical Science—Mechanics' Institute.

A public breakfast took place at the Adelphi Hotel at nine o'clock. At eleven the various sections met.

Section A. (Mathematics and Physics.)—Sir David Brewster presided, and papers were read on the following subjects :—By Mr. Lubbock, on tide observations; Mr. Burt, on aeriel currents ; Colonel Gold, on telegraphic communication ; Mr. Cunningham, on magnetism ; Professor Whewell, on an anemometer ; Mr. Osler, on ditto ; Professor Powell, on dispersion of light.

Section B. (Chemistry and Mineralogy.)—Dr. Apjohn presided in the absence of Mr. Faraday. Mr. George Crane read a paper "on the smelting of iron by anthracite coal," in which he shewed that iron of a very superior quality could be manufactured at a much less expense than at present, by using anthracite coal. Mr. Golding Bird read a paper on the subject of the crystallization of metals by voltaic action. Mr. R. Kane read one on pyro-acetic acid.

Section C. (Geology and Geography.)—Professor Sedgwick presided. A report "on the relative levels of land and sea," was submitted by Professor Whewell. Rev. T. Yates read a report "on mud in rivers," and also "on fosil vegetables in new red sandstone of Worcestershire." H. G. Strickland read one "on gravel." Capt. H. M. Denham, R.N., resident marine surveyor of the port of Liverpool, produced an elaborate report, illustrated by drawings and diagrams, of the tidal capacity of the Mersey at its separate stages of high-water, springs, and neaps. at low-water, springs, and neaps and at the half-tide level—(which he proved most clearly was a level applicable to every tide at three hours before and after each high-water period), especially noticing its progressive velocity, and giving in detail the amount of salt and insoluble matter contained in every cubic yard of tidal water at various depths, and at every half-hour of flood and ebb, showing the predominent portion on the ebb, and the consequent effect upon the banks and channels in Liverpool Bay, which quantity Captain Denham curiously and most interestingly proved agreed with the cubical increase found in the region of deposit. The hypothesis, thus deducted into practical results, was received by the association with rapturous greetings and a most animated discussion, when the gallant captain re-

ceived the public thanks of the president, the Marquis of Northampton, the president of the geological section, Professor Sedgwick, and the most gratifying compliments of Mr. Greenough, Mr. De la Biche, Mr. Manhican, &c. Indeed, when we perceive an officer adding such mental and bodily exertions in the cause of practical science, whilst conducting a system of local navigation so ably, that out of 29,000 vessels entering the port in the last two years, but nineteen wrecks have taken place, we would if possible add to the justly due eulogium of the association which have seconded such eminent services to the state; for we must recollect that Liverpool is the second emporium of the kingdom, and almost primary in contributing to the revenue.

Section D. (Zoology and Botany).—An exhibition and slight notice of *argus persicus*, the poisonous miannet of Persia, by Dr. Traill; result of Mr. Children's repetition of Mr. Cross's experiment on the reproduction of insects from the solution of *silica*, by Mr. Gray; on the solid materials of plants and animals, and the effect of their subsequent addition to the crust of the earth, by the Rev. T. Reade; a communication of Sir Thomas Phillips's method of destroying insects which attack books and manuscripts, by the Rev. F. Hope; on *erica mackayana*, with an exhibition of live specimen, by Mr. John Ball; exhibition of *Victoria Regina*, a new water-lily sent from British Guiana by Dr. Shomburgh, by Mr. Gray, a description of which has already appeared in the papers.

Section E (Medical Science).—George Holland, M.D., 1. Cause of death from a blow on the stomach, with remarks on the means calculated to restore animation suspended by such accidents; 2. Inquiry into the influence of the brain on the heart, and other organs in health and disease; H. Carlisle, M.B., TCD., on the formation of the sacrum in man, and some of the lower animals; G. O. Rees, deputy committee, on the analysis of glands and their secretions; J. Black, M.D, account of the late influenza at Bolton, January. February, and March, 1837; M. Bret, F.R.S., remarks on experiments on expectoration; Dr. John Reed, on the fuctions of the 8th pair—experimental inquiry; Dr. O'Beirne, letter as to report—brain and nervous system; J. G. Simpson, on the evidence against the contagious propositions of cholera, &c.; Dr. P. H. Madden, experiments on the connection between nerves and muscles. Dr. Roget, on taking the chair, stated that, owing to the absence of professor Clark, who was expected shortly to arrive in this town, he was acting as president. In all the meetings of this section, at which he had been present, the proceedings had always been conducted harmoniously, which he had no doubt would be so on the present. The secretary would state the heads of the papers to be read. They were furnished by Dr. Holland, Mr. Carlisle, Dr. Rees, Dr. Black, Mr. Brett, Dr. O'Beirne, Dr. Macnitosh, Dr. Simpson, and Dr. Madden.

Dr. Williams then read the report of a sub-committee appointed at the last meeting to inquire into the sounds and motions of the heart, and their causes. The sub-committee commenced their labours by ascertaining the sounds produced by physical agencies in electric tubes; and proceeded, secondly, to examine if they found a parallel in the organs of life, the heart, and arteries. A series of interesting experiments were now detailed, showing the sounds caused by currents of water and more dense fluids, impeded and unimpeded in their course, in electric tubes. The result gave deductions showing that water, in straight elastic tubes, and unimpeded, uttered no appreciable sound; but but an interruption caused by a bend or an angle in the tube, by its contraction at at any point, by knots or projections in the canal, and by foreign substances introduced, as thread and knotted thread, caused the utterance of sounds, as murmur, burring, hissing, rasping, and musical sounds accordingly. At the extremities of the tubes in the openings sound was detected. Dr. Williams then stated that the second division of this subject had not yet been satisfactorily terminated by the sub-committee, who would continue their labours if the meeting approved of it; but sufficient was done to show that the application of these physical laws to life were justifiable, some of which were enumerated, and were highly interesting, some very delicate, and some of practicability.

Section F. (Statistics).—This section met at the Savings Bank, Bold-street. Colonel Sykes presided.

The President read a paper drawn out by himself, in pursuance of a resolution passed at the meeting of the association, held at Dublin last year, giving a statistical return of the four collectorates in the Deccan, under the Bombay government. The paper gave an outline of the

country—its rivers, roads, geology, climate, atmosphere, state of the barometer from six years' observation thereof, quantity of rain fallen within a certain time, the hot winds, whirlwinds, and hail, and observed the only time ice was ever seen in that country was in the hottest part of the year; it was generally preceded by high winds, heavy thunder, remarkably vivid lightning, immediately followed by a heavy fall of hail, which was generally succeeded by a heavy and continuous rain. The gallant colonel also stated that the salubrity of the climate was such, that in six months only one death had occurred in the Poonah districts, and that a child; that the average of sickness was one in fifty-five, and if the cholera was included, which was a European disease, it was one in forty. Of the botany of the districts, he stated that there were 45 roots cultivated, and 22 wild; of fruit, there were seven very fine species of grapes, six of which he had introduced into England within the last twelve months. Of the agricultural produce of the country, he he stated there were two harvests in the year—the rainy and the dry, and that there were twenty-two kinds of grain produced; that the hilly part of the country produced chiefly rice; that some of their productions were very prolific, as much as 61,380 having been known to be produced from one seed, and others as much as 16,960; corn, barley, peas, and sugar-cane—of the latter there were four kinds produced. The garden produce was very considerable, as vegetables formed the chief diet of the natives, not so much from choice as from necessity—their poverty being such that they could not afford to obtain any other kind of food. Edible roots were very numerous, and were divided into fruit vegetables and leaf vegetables. There were many wild plants and flowers used as greens, and the tender twigs of the bamboo were used for a similar purpose Of the grapes of the country the most valuable was a native of Cornwall. The inhabitants made no hay, but allowed the grass to remain on the ground until it was dry, when they cut it with sickles; there were several wild tanning plants, as well as some very powerful kinds. Few European seeds were cultivated.

The reading of different portions of this paper drew forth the admiration of the association.

The Colonel stated that it was compiled from twelve large MS. vols., the fruits of his labours for many years, and that for the benefit of the association he had condensed it to about two hundred MS. folios. The association were unanimous in a vote of thanks to the colonel for his valuable services. During the reading of the paper the chair was occupied by Dr. Taylor.

Mr. Porter read a brief memoir on the "state of trade between England and America," which was followed by

Mr. Ashworth reading an interesting report upon the state of education at Bolton.

The business of this section was terminated by Dr. Taylor reading an abstract of the annual report of the regents of the University of New York, on the progress of national education.

Section G. (Mechanical Science.)—This section met at the Mechanics' Institution. Professor Robinson in the chair.

In the absence of Mr. G. Remington Dr. Lardner read and explained that gentleman's paper on the railway balance lock; the object of this was to do that upon railways which is accomplished on canals by means of locks—namely, to raise the trains to any given height, according to the inequality of the surface.

The next paper was from a Mr. Williams, on what was denominated a "troffos pump." The alleged improvement was, that his pump would allow the water to flow in a continuous stream, while the well or spring might be at a considerable distance from the operator.

Mr. Russell read a paper giving a variety of interesting information relative to the motion of steam-vessels in shallow water.

Mr. Kingley exhibited a model of a new description of drawing board, which, as it contains most of the implements and instruments used in geometrical drawing, is calculated to facilitate the operations of the draughtsman.

THE DINNER.

At five o'cloek five hundred members of the association sat down to dinner at Lucas's Repository. The Marquis of Northampton presided. The dinner was provided by Mr. Radley, of the Adelphi, and Mr. Lynn, of the Waterloo Hotels. On the removal of the cloth,

The noble Chairman rose and said that that meeting, although not a political assembly but a scientific one, yet he was sure there was no one present but would respond to the toast he had the honour to propose, "Her most Gracious Majesty the Queen"—(cheers).

"The other members of the Royal Family" was the next toast.

The Chairman afterwards proposed—"the Mayor and Corporation of Liverpool."

The Mayor returned thanks.

The Noble Marquis, in proposing prosperity to the British Association, said he rejoiced exceedingly when he looked round the room and saw such a brilliant assembly; that he, as their viceroy, might consider himself as dining in great state, surrounded as he was by such a body of distinguished gentlemen. That was his "last dying speech," and in the evening he was to be "turned off," and to give his sceptre into more worthy hands; they would then say, "the king is dead—long live the king."

The "Health of the President elect," Lord Burlington, was then drunk with acclamation.

His Lordship returned thanks, observing that from the flattering manner in which they had been pleased to receive that toast, he found it impossible to acknowledge the compliment in such a way as would be satisfactory to him. When he looked arouud and saw the spirit which pervaded—which animated—the, vast assembly—composed of men from all parts of the country, where no feeling of party or bitter spirit was permitted to appear, but where they had one object alone—that of the advancement of science and the benefit of mankind—at heart, he could not feel otherwise than gratified. It was impossible to reflect on such a scene, and not to contemplate the great moral benefits that must arise from that association. In conclusion he begged to say that he should emulate the conduct of his noble predecessor in the chair, whose health he begged to propose—(cheers).

The Marquis of Northampton returned thanks. He afterwards said that although the greater portion of the British Association, whom he had the honour of addressing, were natives of the British dominions, yet there were others among them from foreign parts. It was extremely delightful to see foreigners amongst them; and he begged to propose "The health of Professor Mholl and the distinguished foreigners who had honoured the British Association with their presence."

Professor Mholl responded to the toast; and, as foreigner, trusted they would make large allowances for the difficulty in which he was placed in having to address them in any than his native tongue. He begged to thank the worthy noble chairman for the honour he had done foreign science. Associations like that—without party-spirit or jealousy—not only contributed to the advancement of science, but also operated as a tie, bringing nations together. If they went on a few years longer, bringing in contact persons known only to each other by their writings, soon all those jealousies and party national feeling would be done away with. He concluded by expressing an ardent wish and hope that the British Association might become a common tie, binding nation to nation—(cheers).

A general meeting of the association took place place at 8 o'clock in the evening, at the Royal Amphitheatre, when the Marquis of Northampton resigned his office of chairman in favour of the Earl of Burlington.

The annual report, which was very elaborate, was read by Dr. Traill, and a statement of the finances of the society was made by the treasurer, by which it appears that the society have a balance in hand of upwards of 5,000*l*. A large addition is expected to the funds from the number of tickets sold, which even now greatly exceed the number sold in Bristol last year.

THE ANATOMIST.

THE LARYNX.

Besides the muscles, vessels, nerves, and mucous membrane which enter into the formation of the larynx, there are four cartilages and one fibro-cartilage.

The *thyroid cartilage*, the largest, presents anteriorly a prominent angle called *pomum Adami*, which is formed by the meeting of irs alæ. Each *alæ* is of a quadrilateral form and presents posteriorly two cornua; the superior cornu is the longest, and is connected to the great cornu of the os hyoides by the thyro-hyoid ligament; the lesser, or inferior cornu being connected to the side of the cricoid cartilage by synovial membrane and ligaments.

The upper margin of each alæ is connected to the os hyoides by the thyro-hyoid membrane, the inferior margin being connected to the cricoid cartilage by the crico-thyroid membrane, which is of a yellow colour and elastic; the outer surface of each is rough and divided unequally by an oblique ridge, the inner surface being smooth and covered by mucous membrane,

The *cricoid cartilage* is next in size and forms a ring, it is narrow before and deep behind, its inferior edge is connected to the first ring of the trachea, its superior edge, anteriorly, is connected by the crico-thyroid ligament to the thyroid cartilage, and posteriorly it supports the arytenoid cartilages; its inner surface is covered by mucous membrane, and its outer surface is rough and presents posteriorly a vertical ridge for the attachment of muscles.

The *arytenoid cartilages*, two in number, are the smallest of a triangular shape: the apex of each is surmounted by a small moveable cartilaginous appendix, the base concave, to move upon the crycoid cartilage; the posterior surface concave to lodge the arytenoid muscles, the external edge convex for the attachment of muscles, and the inner edge is flat. The apex of each is connected to the epiglottis by a fold of mucous membrane called the aryteno-epiglottidean fold, and the base is connected to the crycoid cartilage by synovial membrane and ligaments.

The epiglottis, resembling in form an artichoke leaf, is connected by a stalk-like process to the angle of the thyroid cartilage; anteriorly to the body of the os hyoides by cellular tissue and mucous membrane, and to the base of the tongue by three folds of mucous membrane, the the central one of which is called *frænum epiglottidis*, and posteriorly by the aryteno-epiglottidean folds of mucous membrane.

The *glottis* is the superior opening of the larynx, it is of a triangular form, its base being anterior, formed by the epiglottis, its apex posterior and inferior formed by the appendices of the arytenoid cartilages, and its sides formed by the aryteno-epiglottidean folds.

The *rima glottidis* is also of a triangular form and placed beneath the glottis: the base is posterior, formed by the bases of the arytenoid cartilages, the apex anterior corresponding to the angle formed by the alæ of the thyroid cartilage, and the sides are formed the chordæ vocales.

The *chordæ vocales*, two on either side, arise from the anterior aspect of the arytenoid cartilages, and approaching each other, are inserted into the angle formed by alæ of the thyroid cartilage: the superior is semilunar, the inferior horizontal, and between the vocal chords of either side is a small oval fossa, called the *ventricle* of the larynx.

THE THYROID BODY.

Of a reddish-brown colour, consists of two lateral lobes and a connecting middle lobe. The lateral lobes are placed by the sides of the trachea and larynx, and the middle lobe rests upon the anterior aspect of the second, third, and fourth rings of the trachea. Each lateral lobe is of a pyriform shape, the base inferior, and the apex ascending to the thyroid cartilage; both lateral lobes overlap the carotid vessels, the thyroid artery, and the recurrent nerve; and are covered by the sterno-hyoid, sterno-thyroid, omo-hyoid, and platysma-myoides muscles, the cervical fascia, and the integuments. This body or gland is supplied with blood by the superior thyroid arteries from the external carotid, the inferior thyroid arteries, from the thyroid axis, which is a branch of the subclavian artery, and sometimes by an artery from the arteria innominata, or from the aorta itself, called the middle thyroid artery; its blood is returned by the thymoid veins, which descending on the anterior aspect of the trachea empty themselves into the left vena innominata. No excretory duct has been discovered emerging from this body.

MR. WARDLEWORTH'S OBSTETRIC CASES.

To the Editor of the Medical and Surgical Journal.

Sir,—Should you deem the following cases of sufficient practical importance, and worthy of a place in your widely-circulated Journal, your insertion of them will oblige

Your obedient servant,

S. H. WARDLEWORTH, Surgeon,
Cross-lane, Perdleton,
Sep. 13, 1837. *near Manchester.*

I was desired, some years ago, to attend Mrs. L., aged twenty-four, in labour of her first child. On my arrival I found, on inquiry, that she had been in labour for two days, and that the waters had come away some hours previous to my arrival. On examination I found the os uteri fully dilated, the head presenting naturally and entering the true pelvis. The pains had been strong and frequent, but now the uterine action was suspended, and I was told that she had had no pains since the waters came away. I gave her ʒj of secale cornut. in ʒvj of

tepid water immediately. About five minutes after its administration the uterus began to act freely, pains strong, and without any evident intermission. In about a quarter of an hour after taking the ergot, a very fine girl was born alive. The uterus still continuing to act as violently as before, led me to suppose that that organ was contracting spasmodically upon the placenta, and immediately after securing the funis, ran my finger along the umbilical cord, and found, at the entrance of the os internum, the head of another child presenting naturally—this was also expelled in a short time, and also alive. The uterine action now ceased altogether. I desired one of the attendants to apply firm pressure, with the hand over the region of the uterus; and, after waiting a short time, and no recurrence of pain, I made an examination, and found, to my astonishment, a third child lying snugly within the uterus, and also in the natural position—the os uteri was soft and dilatable. I gave her another ʒj. of ergot, as before. About twenty minutes after its administration a third daughter was born alive. The secundines came immediately away, and no unfavourable symptom occurred after.

Mrs. S., aged thirty, her fourth labour. Was summoned in a great hurry to attend her, on account, as the messenger stated, that the person was dying. On my arrival, I found the woman laid on the bed, to all appearance dead; pulse not perceptible at the wrist; extremities cold. On enquiry, was told she had parted with large gushes of blood during each pain, and that she had been in labour for several hours. On examination I found the os uteri dilated to the size of sixpence, and thin; the membranes ruptured, and the head presenting naturally; the placenta was not placed in any way over the os uteri. Taking into consideration the low state of my patient, as the vital powers appeared almost extinct, I immediately gave her secale cornut. ʒj. in ʒiv. of rum, which had the effect of bringing on re-action, together with strong uterine contractions, and the os uteri began to dilate, and in thirty minutes after the administration of the ergot, she gave birth to a fine lively boy. The placenta came away naturally, and in two months after she had acquired her usual state of health and vigour.

Remarks.—I have been induced to send the above cases, which I think prove beyond a doubt, the power of secale cornutum in producing uterine contractions. Knowing that this effect is doubted by many medical men, and that the ergot is supposed to be injurious and sometimes fatal to fœtal life. In the above cases the children were all born alive and vigorous. I could adduce many more cases to the same effect, as I have been in the habit of administering the ergot frequently, and found the use of it attended with no bad results either to mother or child.

TO CORRESPONDENTS.

Lithotrity.—The case is not unique. Where the fatal symptoms could no longer be concealed, we see no impropriety in the surgeon's leaving town.

University College Student.—The committee of the hospital is for the purpose of regulating the affairs of that institution alone. *The committee of discipline* is for the purpose of watching the conduct of the students of the college, but they have no control over the *moral* conduct of the lecturers. The election of professors is made by the council, which body has also the power of expelling. The council are elected by, and are under the control of the body of shareholders. All appeals from the committee of discipline and hospital, or from the council, are to a general meeting of shareholders and governors

The Rejected should without any hesitation place himself under the tuition of any of the established MOLARES. We opine a three months *grind* will be required.

Gracchus. The Biographical Sketch alluded to was written by Erinensis in his best style, and will be found in the Lancet.

Medicus.—Doctor Bull, Doctor Hogg, and Doctor Lamb, are members.

A Student.—The practice of the Charing-Cross Hospital is not *recognized*, nor is there the least likelihood of its being so. Dr. Golding is still Director.

G. S. Southamptom must ere this, have seen that his wants have been supplied.

J. R. He has recanted his former doctrines.

Publicola.—News from Dublin will be acceptable, but must be authenticated.

All communications and works for review to be forwarded, (carriage paid) to Dr. RYAN, 4, Charlotte-street, Bloomsbury-square.

THE

London Medical and Surgical Journal.

No. XXV. SATURDAY, SEPTEMBER 23. Vol. I.—(1837.)

LECTURES ON DISEASES OF THE SKIN,

Annually delivered in Paris,

By M. Biett,

Reported by MM. Cazenave and Schedel.

VARICELLA.

Varicella is a non-contagious disease characterized by an eruption of vesicles more or less numerous, the appearance of which is preceded aud accompanied by constitutional symptoms, and the desication of which generally occurs from the fifth to the eighth day.

Questions of great importance have been raised in latter times with respect to varicella. and we deem it right before giving the description of this disease, to enter into some details on this subject.

The name of varicella, or flying small-pox (*petite verole volante*), had been given, at first, to slight affections of a purely vesicular character, to distinguish them from small-pox properly so called, to which they were found to bear considerable resemblance, and of which they were regarded as varieties. At a later period these diseases were completely separated, as well in reference to the symptoms as with respect to the causes. Never, it was said, are the symptoms of varicella those of variola; nor is the cause of variola ever that of varicella. Differences so considerable were sufficient to trace awell-defined line of demarcation between these two affections, and according to those who established these distinctions, nothing was easier than to distinguis these affections from each other. Experience has not, however, demonstrated the truth of these assertions; for we see that in the lengthened debates on inoculated variola, very skilful practitioners give the name of varicella to affections, which, according to others, were real instances of variola Far from being decided by the discovery of vaccination, these dissensions on the nature of varicella became still greater, and even in our own time, the conclusion of practitioners is not generally established with respect to this very important question.

Among the authors who have paid particular attention to this subject, some, as Thomson, Berard, Delavie, &c., maintain that varicella should not be distinguished from variola, of which it is but a variety; for, according to them, the cause of the two diseases is the same. Others, as Luders, Abercrombie, Bryce, &c., while they admit that certain variolic affections have been incorrectly designated by the name of varicella, maintain, that the latter should be distinguished from variola, and that it constitutes a distinct affection, as well by reason of its symptoms as of its cause.

Let us now take a rapid view of the facts and arguments advanced by these authors in defence of their opinion. We shall then assign the reason which has determined us to describe varicella as a disease distinct from variola.

M. Thomson having observed that in variolic epidemics, vesicular eruptions bearing an entire resemblance to varicella, became simultaneously developed, and under the influence of the same causes as variola, both in vaccinated individuals, as well as in individuals who had already had variola, was naturally led to conclude that these eruptions having one and the same cause, should be considered as varieties of one and the same disease.

In these epidemics as well as in those which we had an opportunity of observing some years since in Paris, the different eruptions might be divided into three groups: 1. Variola, properly so called 2. That which is called the *varioloid* dis-

ease, or modified variola; 3. An eruption, purely vesicular, presenting all the appearances of varicella.

One sole cause, the variolic contagion, seemed to develope these different eruptions: they were observed in the same districts, in the same streets, and in the same houses. Should the disease attack a numerous family, some were affected with variola, some with varioloid form, and some with varicella. There was one striking circumstance in every case, and that was the mildness of the disease in persons who had been vaccinated, and in most of those who had already had variola; the eruption in these individuals presented all the characters of the *varioloid* form, a name imposed in consequence of its striking resemblance to variola, and Dr. Thomson had no difficulty in proving that it was nothing but variola itself modified by the influence which either vaccination, or a previous variola had exercised on it.

But the Edinburgh professor went still farther, for he advanced that the varicella itself was nothing else but modified variola, sustaining his assertion on the following grounds:—

1st. On this circumstance, that on the one hand, persons placed in contact with other individuals actually affected with varicella had contracted variola, and that on the other hand, the contagion of this latter affection had developed varicella.

2. On this circumstance, that there never exists an epidemic variola without varicella, and *vice versa.*

3d. And lastly on this circumstance, that varicella is only developed in those individuals whose constitution has been modified by the previous existence either of the vaccine inoculation or of variola.

This opinion of M. Thomson is far from being generallay adopted. It has even been combated by physicians who entirely concur in his opinion with respect to the variolic nature of the pustular eruptions observed during the epidemics of variola, and designated by the title of *varioloid* diseases.

In answer to the arguments advanced by M. Thomson in support of his opinion, they observe:

1. That in a variolic epidemic, it is very difficult to determine precisely whether the developement of this affection in persons placed in contact with others labouring under varicella is rather the result of this communication than of the variolic infection which then developes the disease on all sides.

2. That the vesicular varicella properly so called is not transmitted by inoculation, and never developes variola.

3. That the persons who consider varicella as contagious have confounded this affection with the *varioloid*, or modified variola.

4. That varicella is developed in persons not vaccinated, and who have never had variola, where, therefore, it cannot in any way be looked on as a variola modified by the previous existence either of this disease, or of vaccine virus.

5. That vaccination performed a short time after the disappearance of varicella, follows its course in the most regular manner, which never happens when vaccination is employed after variola.

6. That variola often prevails epidemically without being accompanied by varicella, and that, on the other hand, this latter affection may also prevail epidemically without being accompanied by the former.

Finally, that the characters of the eruption, and the symptoms of varicella differ essentially from those of variola.

These objections have been met by M. Thomson; but the question remains still undecided; accordingly it still appears to us indispensable to follow the rout already traced, and still to describe varicella among the vesicular diseases and as an affection distinct from variola.

Varicella is, as we have said, an affection characterized by an eruption of vesicles more or less numerous, presenting a certain size, and becoming dry in the space of from five to ten days. These vesicles are at first transparent and afterwards become opaque. Their appearance is preceded and accompanied by constitutional symptoms: they are distinct and most frequently attack the entire body, but in successive crops.

Two varieties of varicella are distinguished: in the one, the vesicles are small and but slightly elevated, and contain a limpid, colourless fluid; in the other the vesicles are large, globular, soft, broader in their body than at their base. The contained fluid which is at first transparent soon becomes turbid, and assumes a milky appearance.

Of these two varieties the first is called by English writers by the name of *chicken-pox*, and the second by that of *swine-pox*.

Both may be developed in the same individual at different periods, and present the same symptoms, whether they occur previous to or after vaccination or variola.

Varicella often prevails conjointly with a variolic epidemic. According to some authors some epidemics have been observed where varicella alone prevailed. It is chiefly developed in the commencement of the year, and during spring. It ordinarily happens that the same individual is affected but once in his life, though he may be affected several times. The disease is principally observed in young persons, though it may attack adults.

Varicella is preceded, for twenty-four, thirty-six, or forty-eight hours, by depression, general indisposition, thirst, loss of appetite, and constipation. There is frequently nausea, sometimes vomiting and pain in the epigastrium; the skin is hot, the face injected, the pulse rapid, and there is a tendency to sweat. These symptoms, more or less severe, may be very slight. In general they do not cease at the time of the eruption, but they continue for two or three days. The eruption usually commences on the trunk, sometimes, however, on the face, and continues to come out for several days in succession.

In the varicella with small vesicles (*the chicken-pox* of the English), there are observed, from the first day, small elevations of a red appearance, irregularly circular, in the centre of which a small transparent vesicle soon points out. These vesicles increase in size during two or three days; some are pointed, others flattened. On the second or third day, the fluid which they contain, from being transparent becomes milky; the patient is very much troubled with itching; the vessels become flaccid, and seem flattened. On the fourth day some of them are encompassed by a red areola. Towards the fifth, desication commences, and from the sixth they are succeeded by small brownish scales. These small thin crusts dry from the circumference towards the centre, and fall off on the ninth or tenth day. As successive eruptions of vesicles take place during two or three days, different periods of the eruption are observed simultaneously in the same person, and the duration of the disease is prolonged to the eleventh or twelfth day.

The varicella with globular vessicles (*swine-pox* of the English), is preceded by the same symptoms, and is developed in the same manner. The red points are soon succeeded by large vesicles containing a transparent fluid, which becomes turbid after the second day of the eruption. The vesicles have then attained their maximum size; they are soft and flaccid to the touch; they are of a pearl white colour, and their circumference, which is surrounded by an inflammatory areola, extends beyond their base.

After the third day the vesicles become depressed; they are shrivelled, and the contained fluid becomes thick, and assumes a yellowish tint.

As there is, at the same time, considerable itching, it often happens that children open the vesicles by scratching them, which occasions an additional degree of inflammation in these points, and also the formation of a yellowish pus, which is more or less thick. This happens chiefly on the face. The crusts that succeed these pustules continue for a longer time, and leave behind them small cicatrices. The same phenomenon may also occur in the preceding variety.

The vesicles, after being depressed, open before the end of the fourth day, and are succeeded by small lamellated brownish crusts. These crusts dry from the circumference to the centre, and fall off in the space of four or five days, leaving small red surfaces behind them, which gradually disappear.

As the vesicles come out successively during two or three days, the eruption is observed simultaneously and in the same person, in different degrees.

Diagnosis.—It is very easy to distinguish varicella from decided, or even from distinct variola, by means of the regular course, and gradual developement, of the variolic pustules, which also contain a whitish thick matter, the developement of which precedes the suppuration, and was pointed out long since by Ashburner, an English physician. But it is not so easy to distinguish varicella from the modified variola.

In this latter affection the precursory symptoms are, in general, very severe; which never happens in the case of varicella. In the modified variola, the eruption is pustular. The pustules are small, circular, and most frequently depressed in the centre. Frequently after the fall of small scaly crusts, small tubercles are observed, which disappear slowly. In varicella, the vesicles, at first transparent, afterwards contain a sero-purulent fluid; they are never succeeded by small tubercles, as the modified variola. We shall further remark that varicella is not contagious, whilst the modified variola may be transmitted by inoculation, and even, in certain cases, may develope a rather severe variola.

The treatment of varicella is very simple: a regulated temperature with a free circulation of air, tepid drinks, and confinement to bed, are the only means required, even in the most severe cases.

ECZEMA.

The term eczema comes from the Greek ἐκζεω, *effervesco*. Willan has adopted it to designate one of the genera of the vesicular affections.

This genus is characterized by vesicles which are ordinarily very small, collected together in great numbers, and most frequently occupying very extensive surfaces which are irregular and not circumscribed.

Eczema may present appearances entirely different, according as it exists in such or such a state; which circumstance has no doubt induced Willan to divide eczema into E. *solare*, E. *impetiginodes* and *rubrum*. M. Biett, in his clinical lectures has been long in the habit of dividing it into acute eczema and chronic eczema. This method we have adopted.

Under the acute *eczema* we rank:—

1. The *eczema simplex*, which constitutes a very distinct variety by its slow progress, but one very different from that of the chronic eczema, which succeeds the acute eczema. 2. The *eczema rubrum*; and 3. The *eczema impetiginodes*.

1. *Eczema simplex*. This variety presents itself under the form of extremely small vesicles, which are very crowded and close to one another, and developed, without the least inflammatory areola, over a surface, the colour of which does not differ from that of the surrounding skin.

Eczema simplex appears without the slightest precursory symptom; the patient feels a slight itching, and is very much surprized at seeing an eruption of greater or less extent. The vesicles which constitute it are numerous, very much crowded, transparent, small, and free from pain; they present a shining appearance; the small drop of serum which they contain is turbid, and takes on a milky appearance; the liquid is soon re-absorbed, the vesicle withers and falls by an imperceptible desquamation, or else it opens, and there forms an extremely small thin scaly disc, which soon becomes detached. In no case does the eruption occasion those inflamed surfaces, that exhalation of serum, and that renewing of the scales observed in the other varieties; it does not leave the slightest trace behind it.

These different stages take place slowly, and the disease is generally prolonged by successive eruptions, which causes its usual duration, to vary from one to two or three weeks, and sometimes even beyond that period.

The *eczema simplex* may be general; but it is usually limited to a surface of more or less extent. Among other places it is observed rather frequently on the arm and fore-arm; very often in the space between the fingers, and being sometimes confined exclusively to this part, it may be mistaken far the itch. It is not accompanied by any other symptoms than an itching, which is sometimes severe, more particularly when the eruption is general.

This variety of eczema appears most frequently in young persons, and chiefly in females. It is frequently observed to develope itself after irritating frictions and lotions. It is this eruption which is most generally occasioned by those medicines sold by quacks to drive out the itch. We have very often observed it in persons obliged by their trade to continue all day near a furnace or very hot fire.

Lastly, it is sometimes the result of causes not easily appreciated; thus it often appears between the fingers in women after accouchment.

The *eczema simplex* is a slight disease which is never accompanied by constitutional symptoms; it often complicates them, being ordinarily produced by the means employed to combat it; it sometimes exists with lichen.

LECTURES ON SURGERY.

By John Hunter, F.R.S.

Of the Resolution of Inflammation by Constitutional means.

If the inflammation is of the true adhesive kind, the only thing to be done is to lessen everything that has a tendency to keep it up, because we know of no method that will entirely quiet or remove the inflammatory disposition, or mode of action; there is no specific against inflammation that we are acquainted with. Whatever will lessen the power or disposition will lessen the effect.

There appears to be three means which tend to remove inflammation: first, by weakening; secondly, by producing temporary weakness; thirdly, by lessening or soothing the irritability.

That which absolutely weakens is bleeding, purging, quietude, and low diet. The temporary weakness is produced by

sickness at the stomach, faintness, &c. The soothing effect may be produced by sedatives, antispasmodics, &c., such as many sodorifics, anodynes, &c. The first will have the greatest, most immediate, and most lasting effects; the second and third act as auxiliaries; the second probably will come nearest to lessening the cause, while the other will assist so far as irritation is a cause; they should go hand in hand, for wherever we lessen the power we should at the same time lessen the disposition for action. But neither bleeding, sickness, nor purging can possibly lessen the original inflammatory disposition: by lessening the power of action of any disposition you only lessen or protract the effects, which, however, will be of singular service, as less mischief will be done, and will often give the disposition time to wear itself out.

Bleeding, then, at first may be necessary; but this must be done with some restriction. If inflammation arises from real powers, then bleeding freely is absolutely necessary; but if from too great action of weak parts, bleeding should be no more than what will lessen the violence of the blood's motion, or remove the feeling in the part inflamed of too much to do. The quantity, therefore, must be according to the symptoms and other circumstances, that is, according to the visible indications. The indication for bleeding is, first, according to the violence of the inflammation, joined with the strength of the constitution; secondly, according to the disposition to form blood; thirdly, whether the disease is in a vital part; fourthly, its situation, whether near the heart or not; fifthly, according to the duration and the extent to which it has affected the constitution.

With respect to the first kind, in which the constitution is strong and the inflammation is violent, bleeding largely is proper, and in many cases bleeding near the part will answer better than from the general habit; less may be taken away in this way with an equal effect on the part inflamed, and of course with less effect on the constitution, as bleeding from the temporal artery, or the jugular vein, for complaints of the brain, or cupping or applying leeches near the part, as, for example, to the temples in inflammation of the eyes.

The same mode of practice is to be followed with regard to the second, third, fourth, and fifth. It seldom happens that one bleeding will be sufficient in a considerable inflammation. The first blood taken affords a symptom of the disease; if it is buffy, thick, and considerably cupped, future bleedings may be used with less caution. On the other hand, there may be indications for bleeding sparingly; first, from there being too much action with weakened power; secondly, from a disposition to form little blood; thirdly, from the part being far from the source of the circulation.

A gentleman had a violent inflammation of the eye; the blood was sizy, but though sizy the coat was exceedingly tender, and so slight as not to bear its own weight when raised up. He was blooded plentifully several times, without any good. Here was not, then, much power, the blood putting on the sizy appearance in consequence of there being increased action in the vessels of this part of the body.

A lady with inflammation of the tonsi's was blooded; the blood was sizy, but loose; and after three bleedings the blood became so loose that the bark was given, which did service. The disorder returned again, and the same mode was used; the blood was sizy only in the first bleeding: the bark was obliged to be again given.

In such cases bleeding is very seldom necessary. Where it is necessary, it should be as near the part as possible, in order that it may have the greatest effect on the part with the least damage to the constitution. If local bleeding be used, leeches will answer best, because but little inflammation follows their bite; however, this can only be put in practice in inflammations which are pretty much external. In many cases we cannot take it immediately from the part, and must be content to go as near as we can, as in bleeding from the temporal artery or jugular vein, in affections of the head. Sometimes of course even this will be impossible, as in inflammations of the liver and stomach.

Too much action with small powers may often, if not always, be classed with the irritable, and bleeding here should be performed with very great caution. When inflammation is far from the source of the circulation the same precaution is hardly necessary, as in general it can be taken away from the part.

We cannot depend on sizy blood alone as a proof of the proprity of repeating the bleeding; we must take into consideration also the strength of action.

The pulse is a great indication for bleeding in inflammation, but is not

always to be relied on. In inflammations that are visible, the knowledge of the kind of inflammation is in some degree ascertained, in which cases it has been supposed that we go on surer grounds in our indications for bleeding. But all inflammations are not visible; therefore we require some other criterion. If we could ascertain the pulse peculiar to certain appearances in visible inflammations, and were sure that universally the same pulse attended such appearances, we should then suppose we had the true indicative criterion to go by, and be able to apply it to invissible inflammations, and judge of these by the pulse. But when we consider that the same kind of inflammations in every part of the body will not produce the same kind of pulse, but very different pulses, not according to the inflammation, but according to the nature of the parts inflamed, and many of these parts are invisible, we see that we at once lose the criterion of the pulse as a guide. There may be every symptom of inflammation and the pulse be soft, and not quicker than usual, and yet the blood when taken away will be sizy and cupped.

A lady had this kind of pulse (soft and not quick), and at the same time had a violent cough, with tightness of the chest and stitches in the side; bleeding was ordered, when the blood was found sizy, &c.; nor did the illness subside till the sixth bleeding.

A hard quick pulse is generally an indication for bleeding, being frequently accompanied with sizy blood; but even these signs are not always to be depended on as furnishing a criterion. The kind of blood is of consequence to be known, for although it should be sizy, if it is not firm in its texture, but lies squat in the dish, bleeding must be performed very sparing.

As the pulse simply, independently of all other considerations, is not an absolute criterion to go by, and as a sizy and strong coagulum is only an afterproof, let us see if there are any collateral circumstances that can throw some light on this subject, so as to enable us to judge, *à priori*, whether it is right to bleed where the pulse does not of itself indicate it.

When speaking of inflammation of various parts, I took notice of the pulse peculiar to each part, which I may now be allowed to repeat. First, I observed in inflammation of parts not vital, or such as the stomach did not sympathize with, that if there was great power and not much irritability, the pulse was full, frequent, and hard. Secondly, on the contrary, in inflammations of the same parts, if the constitution was weak, irritable, &c., that then the pulse was small, frequent, and hard, although, perhaps, not so much so as when, thirdly, the inflammation is in a vital part, as the stomach or intestines, or some part with which the stomach readily sympathizes; then the pulse is quick, small, and hard.

Now in the first of these dispositions bleeding is absolutely necessary; but in the second, where the pulse is small and frequent, bleeding should be performed with great caution: though the person may be of strong constitution, yet in inflammations of these parts the constitution appears to be more irritable, and to have a greater sense of weakness. We should bleed to two or three ounces by way of trial, which could do no harm.

The urine will throw some light on the disease; if high-coloured, and not much in quantity, it may be presumed, with the other symptoms, that bleeding will be of singular service; but if pale and copious, though the other indications may be strong for bleeding, it may be necessary to do it with caution.

Bleeding, however is a remedy of so much importance that it should be employed in all cases with great caution; yet not more than appears really necessary.

I cannot perceive why bleeding should have such an effect on inflammation as it often has. We cannot account for it simply on the mechanical principle of lessening the quantity of blood, because this can never remove the *cause* of inflammation.

Medicines—Medicines which have the power of producing sickness lessen the powers of life universally, because every part of the body sympathizes with the stomach; and when they are intended to produce this effect they should not be given in doses sufficient to produce anything more than sickness, for the act of vomiting is rather a counter-action to that effect, and I believe has rather the effect of rousing, as few are so weak as not to be able to bear sickness. Purges have been much recommended, under the idea that there were humours to be carried off; such practice answers best in the cases in which bleeding is useful. In irritable habits, were inflammation becomes more diffused, greater caution is necessary, as nothing tends to weaken the habit more. A single purge has been known to produce death in dropsy. In such cases bark may be required to bring the constitution into a proper state, either for

resolution or suppuration, by increasing the powers and diminishing the action; and thebaica may be a good assistant as a soother or sedative with the bark.

Modes of Resolution by external applications.—Whether we have any external applications which have really a tendency to resolve an inflammatory disposition, is not well ascertained. We are in possession of many that can weaken, so as to lessen the powers, (most of which appear to be of the soothing kind,) and thus lessen the action, though the cause may still exist; by which means the effects are lessened, and the inflammation is either cured or protracted, until the disposition wears itself out Perhaps cold is one of the greatest weakeners, but it should not be used too freely, as it may produce a worse disease, which is indolence, Lead is supposed to have considerable effects in this way; but I believe much more is ascribed to it than it deserves. Its properties appear to be to lessen the powers, and therefore it should not be used except when the powers are too strong. Applications to weaken should not be applied to irritable parts; on the contrary, the parts should be strengthened, which can only be done through the constitution.

Whatever power external applications possess, they must act in one of four ways: first, which is the immediate or truly local; second, by repulsion; third, by revulsion and derivation; fourth, by sympathy, which is probably the same principle in the animal economy as revulsion and derivation.

The first, or local effect, may be of two kinds: 1st. simply such as is an antidote to the action of the part, as cold, sedatives; 2nd. such as destroys the first irritation, by exciting a second. This is most applicable to specific diseases, as the action of mercury in a venereal sore: but all specific diseases will not allow of it; a gonorrhœa in a scrofulous habit is an instance of this. In some cutaneous cases this mode of cure is very useful. Sedatives are less useful as local applications than counter-irritants, but both of them may have another effect, viz. repulsion or derivation, which must be from a constitutional affection, such as I have called an act of the constitution, as in gout. If the constitution is determined to have a local complaint, by which she throws off a constitutional disposition, then these revulsions do not rid the constitution of the disposition. It is difficult to say what will merely repel and what will cure. Repulsion, however, is a cure of the part, whatever effect it may have on the constitution. Surgeons were formerly greatly afraid respecting repulsion. They were even afraid of curing a gonorrhœa, lest they should drive it back into the constitution and produce a pox; but they did not consider that it does not arise from the constitution, and has nothing to do with it.

Revulsion and derivation appear to me to depend on the same principal in the constitution as sympathy, and, like the latter, have the greatest effect in habits which are irritable or nervous, and in diseases which are nervous, as cramp; not in such as change the structure of parts. I knew a nervous girl cured of pain in one arm by rubbing the other. These terms were used under the idea of removing humours by inviting them from other parts, as making an issue to remove eruptions. They probably act by causing an irritation in one part to cease when an irritation in another is excited; and this latter may be made greater than the original one, though in a part less dangerous, and where it can be more easily cured, as burning the ear cures the toothache; vomiting, the swelled testicle; blisters, pleurisy, &c. In some of these, as the vomiting to cure the testicle, no new disease is excited, but only the action of the part. The cures performed by these modes are in many preferable to those by means of local applications, and they will succeed where the others fail; thus, vomiting will cure hernia humoralis, when other applications have had no effect. The cure by revulsion, or sympathy, is in some respects the reverse of that by derivation, yet it is probably from the same consent of parts, but from a different action. In these a remedy is applied to a sound part to cure a diseased, which is either contiguous, continuous, or remote, and the action is either similar or dissimilar. The cure of continuous parts by similar sympathy is by the application of such remedies as we suppose would cure if applied to the part. That of remote parts by dissimilar modes of action, is by stimulatiug a part in such a way as that the sympathy shall act in the same way, and yet the action in the diseased part be not at all similar to that in the sound part: suppose, for instance, a part in any mode of action, a medicine applied to it would increase that action. but by applying it to another part it will remove the first. The contiguous is different from the two former, and can only be applied to surfaces, as a blister to the scalp to remove head-

ache. These may be either stimulating, or soothing, or specific.

Treatment of Adhesive Inflammation when Suppuration must take place.—The treatment must, in some measure, be the same as in the foregoing in accidents where the powers are very great, and the inflammation violent, namely, bleeding, purging, sickness, &c.; but when the constitution is irritable, bark, &c., as before directed. In cases where there is considerable sympathy, sudorifics, as Dover's powder, seem desirable, as they tend to keep up the harmony between the skin and the stomach. Opium in peculiar constitutions increases irritability; but in others, where there is not this peculiarity, it is highly useful in soothing and diminishing irratibility.

Different applications have been made to the inflamed parts, as fomentation, washes, poultices, &c. The mode of applying heat and moisture by fomentation appears more efficacious than in the form of a fluid; it certainly gives ease at the time of the application, but the symptoms generally recur between the times of using it, and with nearly the same violence. How far the application of a medicine for fifteen minutes out of the twenty-four hours does good, I hardly know.

Washes are fluid applications, and are more commonly used to inflamed internal surfaces than to the common integuments. I am afraid we are not much acquainted with their true specific virtues, the use of them being very vague. For inflammation of the eyes we use astringents, as alum, vitriol, &c. For inflammations of the throat with port wine, vinegar, &c.; yet how absard it would be, in the opinion of any surgeon. to use the latter applications to the eyes; and yet if the two inflammations are the same I do not see why we we should not use the same remedies to both parts. These like the former, have only temporary effects.

Poultices are constant applications, and may be either simple or medicated; their effect is greatest locally, but it extends likewise to surrounding parts by sympathy. They may be medicated with lead, opium, &c. Simple poultices are the best application where we have no particular object in view.

THE MEDICAL JURIST.

No. 3.

INSANITY.

After the time of Pinel, the allowance of food to patients in the asylum under his charge, was reduced one-fifth, and great mortality ensued. One keeper was executed for starving a patient to death. Maniacs require a large quantity of food, owing to the violent exertion which they undergo, and the loss of strength from perspiration, &c. The diet should be plainly, but well cooked; and, to convalescents, served up neatly. At the Liverpool Asylum there are four rates of board; and the diet, of course, differs in such; but if the physician orders it, the poorest patient gets a dinner of the best. The four classes dine separately; the meat is all cut, and therefore no knives and forks are used by the patients, who eat with a spoon. They all pay, or their parishes for them. The kitchens are fitted up with all the modern improvements.

Amusements are too often scandalously neglected. Occupation withdraws the thoughts of the patients from the subject of their malady. The best model of an asylum in this respect, is in a bad country, at Saragossa, in Spain; there are large garden, in which the convalescents may occupy themselves; and those of different habits are employed in other ways, either in the house or in workshops. From its neatness and the regularity of all its arrangements, it has the appearance of a military asylum. The patients have among them a wealthy association for the cultivation of olives, and other patriotic objects. Aristocratic patients in general disdain labour, and are less frequently cured on that account. In towns, with the exception of skittles, fives, see-saws, and others, no games out of doors can be pursued; but some can work as joiners, and at other trades: the usual reward for working (and they generally seek it with avidity) is a little better diet, or a better ward. For convalescents, newspapers, books, draughts, the piano forte, and (for females) the mending of clothes, afford pleasing occupations. One of the best books for this pnrpose is the Penny Magazine. Those who make the beds, wash the cups, clean the rooms, and perform other domestic services, get better sooner than others. In Amsterdam there are only a few servants in an

immense establishment of poor persons, the latter performing most of the work. If the patients have previously had a taste for the fine arts, their cure will be facilitated by cultivating them. If they are fond of music, for instance, when their attention can be drawn to it, their convalescence is begun. Always allow it, unless the hallucination should happen to relate to it. At the Bicetre, and Salpetriere, there is a large cobler's shop, and those who work in it obtain a small premium on their discharge.

A slight must never be shown to the feelings of patients. Convalescents are sometimes thrown back by denying them the materials necessary for their work, or not allowing them to go work at the usual time: they are often very sensible to galling words. or anything like contempt or indignity. Such treatment will often produce the most violent excitement. You should never break your promise, even when made while the patient was maniacal, for persons of moral feelings often retain a great regard for their word. A gentleman, says Dr. Traill, was brought into the asylum at Liverpool, in so violent a state of excitement as to require confinement in bed. As he had been at my house a few days previously, he considered me to be the author of his "imprisonment," as he called it; and on that account had a violent antipathy to me. By moistening one of his hands with urine, he made the manacle so soft, that he slipped his hand through it. and then, with a piece of glass which he had taken from a window he had broken, and had secreted in his mouth, he cut all the other straps. On looking through the aperture opening into the gallery, I saw him standing quite naked, his body smeared with excrement which he had taken from the close-stool. He had very nearly torn away the window-frame; and we afterwards learned that his intention had been to precipitate himself out of it; which was of a height of three stories. The governor rushed in with me, but before we could secure him, he struck us each a blow in the face; the governor pinned him in his grasp; I laid hold of his legs, and we laid him on the floor. The manacles brought by a keeper were too small; and while the governor went to look for others, he was left in charge of the keeper and myself. He then asked me why I held him on the floor. I replied that he had struck the governor and me; but we allowed no striking in the house; that I knew he was a man of his word, and would let him rise if he would promise to be quiet. He promised accordingly; and though the keeper remonstrated, I ordered him to leave the room, and not to interfere with my patient. We sat down quietly on the edge of the bed, and talked quietly of the weather, and other matters, till the return of the governor, when he held out his hands for the manacles, and we were ever afterwards good friends. All this was owing to my having betrayed no fear, and shown perfect confidence in his word. I have sometimes made great sacrifices of time, rather than break a promise. I once listened for two hours and a half to a written statement, and the patient was then satisfied that I was not one of the conspirators, as he thought I had been; and he told the governor so.

Lunatic asylums are not now made exhibitions as they formerly were, and which must often have had a very injurious effect upon convalescents. In Great Britain, and in many places on the Continent, they cannot now be seen without an order from the governors, or the medical men attached to them.

You must endeavour to calm the maniac; to soothe the melancholic, &c. Till they are nearly well, however, they cannot listen to long arguments, and therefore should be short and pithy. They must be treated as children in winning, restraining, correcting, &c. Some, however, are very witty and shrewd, and detect any inconsistency in words and actions. In their excitement they sometimes remember former kindness. They are very susceptible of taunts. Dr. Traill once said to a patient, he was sure he was not goose enough to believe such nonsense; but he remembered the taunt in all subsequent paroxysms. and asked the doctor if he thought him a goose now, or that he could only talk nonsense. The habit of seeing people rise, eat, &c., at regular hours, and the obedience of other patients, has the best effect. There was, not long since, an investigation into the treatment which a distinguished naturalist met with from menials. He was kicked by them, and received every indignity, though he had not lost all recollection of his former condition. A gentleman informed Dr. Traill, that at an asylum where he lived as an assistant, about the end of the last century, the doctor used to arm himself with a whip, *in terrorem*, before entering the yard.

Maniacal explosions, as Pinel says, are only automatic impulses, at which it is

not rational to be angry. If much excited, the patient cannot listen to argument; and if dangerous, he must be restrained. For this purpose a bed with straps is preferrable to a strait-jacket, for how carefully soever it may be put on, the action of the patient generalty makes it press on the neck, where, by impeding the passage of the blood through the jugular veins, it increases the determination to the head. Conspiracies have sometimes been formed to seize the keepers and get possession of the keys. Some persons are aware of the approach of a paroxysm, and beg to be confined. One gentleman used to go to the Liverpool Asylum, about every nine months, and request admission; but this could not be granted without the order of a medical man. A woman used to request confinement for a few days, and used then to spit copiously about the room and walls, and on all who approached her. The first thing she did, on recovery, was to clean the room and the bed. There should be a few rooms allotted for noisy patients, but they should not be far from the governor, for such persons require much attention.

Monomaniacs have very disturbed rest. Some abstain from food in consequence of rash vows. In such cases, some medical men resort to the stomach-pump, but it is liable to do harm. In one case, where a long tumour in the neck prevented deglutition, Dr. Traill supported a patient for three months on injections containing eggs.

If religious people become insane, you must avoid all religious books and conversation, and keep them from the other patients, as their spirit is contagious. You must employ solicitous treatment, gentle exercise in the open air, and occupation. There is a great tendency in monomaniacs to suicide. A case occurred in France, in which a patient hung himself from a key which had been left inside the door. He suspended himself by means of a shred which he tore from his shirt, and sitting down on the floor he managed to kill himself. In the daytime you may allow such patients to mingle with the rest, and at night confine them, hand and foot, to the bed. Some patients of this kind are apt to dash their head against the wall, and in some asylums there is a room for them with the walls padded. It is very common for patients of this class to cut their throats. If the wound be inflicted on the trachœa below the larynx, and is not closed, the voice is lost. This fact has been frequently shown on a pig. One man thought he was ordered to amputate his penis, in order to obtain salvation. He did so about the middle, with a razor; injuring the scrotum at the same time. He recovered after sometime, and Dr. Traill often saw him as a servant; but he avoided any tokens of recognition, as he seemed anxious to avoid it.

Some disapprove of asylums being furnished with chaplains. Pinel disapproves of public religious services for the insane, and Dr. Traill has generally found them worse after the visit of the clergyman. The question is still *sub judice;* but the very best effects have recently followed the introduction of public religious services into some lunatic asylums in Edinburgh.

The following is an instance of moral power exercised over a patient;—I once, says Dr. Traill, went into a room, where there was a patient disposed to be violent. He immediately fastened the door, but at this I was not disconcerted, for the governor was on the outside with a key which would open it. I sate down by him on the bed, when he asked me if I was not afraid. "Afraid," I replied, "of what?" He said, "Afraid of me! I have the strength of ten men in each arm!" I smiled, and told him that strong as he was I had a spell which could master him, and that, if I pleased, I could tie a knot upon him, and throw him out of the window. The extravagance of this boast evidently astonished him. He gave me his hand, and afterwards told the governor that Dr. Traill was a wonderful man, and had "immortal strength."

We must sometimes be cautious in giving liberty to maniacs who appear quiet. There was one, says Dr. Traill, who I thought might be allowed to sit up in the chair. Two or three days afterward he asked me to look into his eye, as there was a speck there. While I was doing so he made a bite at me, on which I coolly observed, that we never allowed biting in the house, since it was inconsistent with the rules of good society, and that if any one attempted to bite, we put him to bed. He replied, "Is it so?" and never afterwards made any attempt of of the kind.

One man refused to eat, because he thought he had the devil in his stomach, and he wished to starve him. Dr. Traill told him that the devil, if not supplied with food, would eat him, which induced him to take food. An emetic, given to expel the devil, hastened his cure. An-

other man thought he had received a command to beat out his brains out with a cobler's hammer, and had actually commenced a spot of the frontal bone before he was discovered and taken into the asylum.

With respect to the medical treatment of insanity, but little of value may be learned from the ancients. Celsus recommends stripes, and other barbarous measures. A better system was begun in Saragossa during the last century, and Pinel was the first to introduce an improved system into France. Willis was not a physician; his treatment was too severe, and it was wrong to allow the keepers to return blow for blow. If blows are allowed as a punishment, it either assumes that the patient is a moral agent, or it is a needless barbarity. It always excites the patient and makes him worse. Celsus recommends cupping at the back of the neck when the patient has much watchfulness. Cullen thinks bleeding is right in recent cases of mania, and that it should be performed in the erect position; but Pinel reprobates it. He says that if deliquium takes place, it is apt to lead to fatuity; and he knew one case in which deliquium followed the loss of only four ounces of blood. He does not, however, forbid bleeding in all cases. An old practitioner recommended Dr. Traill never to open a vein in a lunatic, and the experience of Dr. Traill himself, rather favours the correctness of this precept. If there should be a flushed face, however, and other symptoms of excitement, local bleeding will sometimes be of service. In mania from suppression of the menses, bleeding in the feet is advisable. Dr. Haslam finds blisters to the legs of service in these cases, but not issues; but Dr. Traill approves of the latter, not only when the catamenia are suppressed, but also when insanity has come on after the drying up of a discharge. He never applied blisters to the head; but sometimes, and with benefit, to the back of the neck, or between the shoulders.

The practice of plunging insane persons under water, was begun by Van Helmont. Some have recommended that the patient should be held under water for a long time. This practice is defended by Boerhaave; and Cullen thinks it is sometimes beneficial. Dr. Haslam says it is liable to produce epilepsy; Pinel disapproves of it, and Dr. Traill thinks it barbarous and dangerous. Patients speak of it with indignation. Cox speaks of immersion in a chair, but prefers the shower-bath, or water poured over the head. Some recommend a clay-cap, or a bladder of ice, to the shaved head; but all these plans are inferior to the douche. A quack in London cured several patients by applying ice to the head, while the body was immersed in warm water, or (as a patient described it) by "boiling the body while he froze the head." In using the douche, the diameter of the stream should be about the tenth of an inch, for if it be larger its application gives pain, being like ice falling on the head. It is sometimes required to fall by drops, and its application should never be continued longer than one or two minutes. At Hamburgh, where the baths are most complete, the douche sometimes instantly represses maniacal excitement. Tepid baths, from eighty-two degrees to ninety, are generally liked by the patients, and have a good effect, both in mania and monomania. Cullen doubts their utility, but I think in his time they were employed at too high a temperature, so as not to be tepid but hot baths. Dr. Haslam and others, when before the House of Commons, recommended the use of tepid.

Purgatives have been much employed in insanity, from the time of Hippocrates downward. The ancients used hellebore for this purpose, thinking it had a specific effect in unloading the vessels of the brain; but its only effect is in removing constipation, to which the insane are very subject; what this hellebore was is very uncertain. Wildenow says it was not the helleborus niger, but the helleborus orientalis. The best pill for the insane, is the compound colocynth, sometimes combined with a little extract of hyoscyamus. In cases of violent mania, the patient will often refuse to take a pill, from fear of being poisoned. Here you must either force down a liquid purgative, or give a powder in some article of diet. In public asylums, the common cathartic mixture, made with infusion of senna and Epsom salts, is very good; but in private practice it is better to have a variety, for the patient gets tired of any one that is exclusively employed, and the stomach and bowels are often irritable. Purgatives are thought to be very advantageous in mania, from the benefit which is sometimes observed to arise from spontaneous diarrhœa. But there is a kind of diarrhœa, attended by pain, which aggravates mania, and which evidently arises from irritation of the mucous membrane of the intestines. In this case you must give Dover's Powder.

Emetics are reprobated by Willis and Haslam, but are recommended by Cox and others. Pinel is guarded in the opinion which he gives of them, and they are not much used in France. Dr. Traill has not employed them much, as he thinks the cases which Cox brings forward, do not bear out his general observations. Emetics are very useful, however, in monomania, especially when there is much ropy mucous about the mouth. Dr. Traill has never used tartar emetic for this purpose, but ipecacuhanha wine or ipecacuanha powder. The wine is most easily given. A solution of sulphate of zinc is very good, for it operates quickly, and leaves less debility than the others.

Opiates are much abused in insanity. In large doses they are seldom useful; but in great maniacal excitement they are often of great service. One large dose should be given, followed by small ones. Laudanum and soap-liniment make a very good preparation for rubbing in, or powdered opium in hog's lard. Opium applied in either of these modes soon finds its way into the system.

Camphor, used as a stimulant, often does harm, by increasing excitement; and used as a sedative Dr. Traill has no opinion of it, though he has found it do good in restoring the stomach to a proper state, after it has been disturbed by opium. In Java and Sumatra camphor is obtained from trees, by splitting them; it lies in the interstices of the wood, is very fragrant, and is said to be more sedative than common camphor; but only specimens of it reach this country.

In the latter stages of insanity the treatment must be of a moral kind. Music and conversation, together with skittles, billiards, playing at ball, and other amusements, must be put into requisition.

If the patients can afford it, the best plan is to let them out to ride, with a servant to each. Esquirol's private asylum was the best we have ever heard of. Every patient there had his own servant.

REVIEWS.

Histoire Des Maladies Observées A la Grande Armée Francaise, Pendant les Campagnes De Russie en 1812 *et D'Allemagne en* 1813. Par le Chevalier J. R. S. De Kerckhove. Anvers, 1835. History of the Diseases observed in the Great Army of France in Russian and German Campaigns of 1812 and 1813.

We now resume our notice of this truly interesting and practical work. Chap 3. treats of

Enteritis, which is characterized by a fixed pain in the abdomen, generally felt around the umbilicus, and which is increased by pressure and by moving. This pain is accompanied by an alteration of the features; by constipation, loss of appetite, nausea, vomiting, flatulence, anxiety, oppression, intense thirst. a sensation of internal heat, a certain difficulty of swallowing, want of sleep; by a pulse which is hard, unequal, irregular, often very frequent, very small and sometimes obliterated as if the pain and inflammation impeded the hearts' contractions; the tongue is, in the great majority of cases, red, diminished in size and pointed, or only red at its edges and apex. Sometimes dry and hardened, oftentimes loaded in the centre with a whitish or yellowish coat; the stomach rejects whatever food and drinks the patient swallows; extremities cold, mouth dry, abdomen generally painfully tense, in several cases swollen, and very hot to the touch; there is frequently fever, extreme paleness, sinking, delirium, cold sweat, &c. The inflammation may extend over the entire gastro-intestinal mucous membranes) the tenesmus and liquid, mucous, serous and bloody stools which supervene in enteritis prove that the inflammation extends into the large intestine. The accompanying symptoms just now enumerated, do not always exist combined and may have different degrees of severity.

This inflammation may be sometimes confounded with colic, from which it is to be distinguished by the fever as also the permanency of the pain. It is of the same nature as gastritis, and affects the intestines, as this latter affects the stomach.

Enteritis may be caused by acrid or irritating matters received into the intestines; by the use of bad food, or of a too great quantity of food difficult of digestion; by an external contusion on the abdomen; by iced drink or the impression of intense and sudden cold on the body while it is bathed in perspiration, and even by the impression of cold alone on the lower extremities or on the abdomen: by the unseasonable use of drastic purges; by the too sudden suppression of a diarrhœa, by strangulated hernia, by spasmodic diseases of the intestinal canal, &c. It may likewise sometimes depend

on suppression of the hemorrhoidal flux, or of some of the exanthemata; in a word all the causes capable of giving rises to gastritis, may also produce enteritis. Young persons of a sanguineous and bilious temperament are most subject to it.

Our author here makes an observation of considerable importance in a practical point of view, namely, that it is not uncommon to take cases of enteritis for cases of typhus, in consequence of the cerebral phenomena, of the fever, the depression, paleness aud miserably low state of the pulse, symptoms which are observed in inflammations of the intestinal canal, so that one is disposed to think that he has to combat a prostration of strength, whilst the case is in reality but an oppression of strength, or a false debility. Our author has the candour to acknowledge that this apparent asthenia has often caused him to commit serious mistakes, which he discovered only by an antopsy, and takes this opportunity of recording his obligations to M. Broussais, for having directed his attention to a pathological point of so much importance.

Enteritis is a very alarming disease. It seldom prolongs the duration of its acute stage beyond the seventh day. Its terminations are resolution, suppuration, induration, gangrene, and its transition to the chronic state. The first of these terminations is announced by the developement of the pulse; by the diminution or total disappearance of the febrile state, if it had previously existed; by the diminished tension and pain of the abdomen, and by the return of the stools. In the second termination the pain, though diminished, still continues, the patient experiences some anxiety, and vomiting at intervals, the pulse continues small, febrile accessions are observed, particularly towards evening, the symptoms of hectic fever soon become developed. This termination is almost always fatal, unless the pus is discharged by stool and the ulcer heals. If the pus is effused into the abdominal cavity, it constitutes what is called *purulent dropsy*. The termination by suppuration occurs more frequently in the large intestine than in the small. If the suppuration takes place in the colon, it not rarely gives rise to chronic and incurable diarrhœa.

The fatal termination by induration, which is extremely rare, is discovered by the continuance of a feeling of fixed pain in the belly, by the constipation, by chronic vomiting, by emaciation and slow fever.

The termination in gangrene which is here much more common than in gastrite, is known by the sudden cessation of pain after it has been very violent; by the general and total prostration of the vital powers; by the fall of the pulse, which is frequently imperceptible; by the meteorism; by the coldness of the extremities; by the cadaverous smell of the stools, which are frequent and involuntary; by the great alteration of the features, &c. This termination is not always fatal as in inflammation of the stomach. The gangrenous parts sometimes separate from the healthy parts, and are thrown off with the fœces.

When the enteritis prolongs its duration, when it is in the chronic state, and febrile symptoms have ceased, and even if they should show themselves, it is but slightly, and after dinner; the redness of the edges of the tongue is no longer permanent, it sometimes disappears entirely, or is not observed till after the stomach has been stimulated; the heat, tension, swelling or tymponitic state of the abdomen no longer exist; the pulse is no longer either so hard or so small; it is occasionally in the state of health, principally in the morning, but it presents more or less frequency towards evening; the pain has become dull, oftentimes is felt only at iutervals, increases some hours after eating, and in consequence of any stimulent being applied to the intestinal canal; but the thirst continues more or less, the flatulence annoys the patient very much; he is ordinarily sad and a prey to melancholy; the stools are difficult and dry, there is at times diarrhœa, &c. Towards evening the symptoms become more or less exasperated. The same phenomena are observed in chronic gastritis; but in the latter there is more frequontly vomiting, or a disposition to vomit.

The enteritis which appeared among the French troops appeared to be rather of a bilious nature: for which reason it was called by our author *bilious enteritis* in the first edition of the present work. The autopsy showed that its seat was often limited to the small intestines; sometimes, however, the entire extent of the intestinal canal, even the mesentery, liver, and spleen participated in the inflammation. The two last viscera were almost invariably found affected in the dead bodies which were opened, during the summer, in the hospitals of Wittepsk and Smolensk.

The enteritis observed in the French army was ordinarily characterized by the

following symptoms: very painful tension and oftentimes swelling of the abdomen; depression; tongue covered with a yellowish mucous coat; dislike to food; mouth dry, bitter, or pasty; nausea, bilious vomiting; thirst, anxiety, oppression at the epigastrium; pulse small and unequal; loss of sleep; urine loaded and scalding; pyrexia oftentimes more or less intense; constipation, stools sometimes liquid and frequent; a sort of paleness or livid appearance of the lips; a wild appearance of the countenance, &c. According to the author it was principally occasioned by the too stimulant action on the intestinal mucous membrane of the bile which was effused into the intestinal canal in greater abundance than natural, which in some arose from irritation of the liver, and in others from relaxation of this organ. These two different pathological conditions arose from coarse food, from privations, from atmospheric causes and from fatigue, which, at the same time, rendered the bile of a much more acrid character. But besides this cause, there were others, such as the presence of indigestible matters in the intestinal canal; cold and icy drink taken while the body was bathed in sweat; sudden cold which took place when they stopped under the cool of the night, after having marched all day under the burning heat of the sun, &c. Suppression of the cutaneous transpiration chiefly occasioned inflammation of the intestinal mucous membrane, the latter being already irritated by the bad food and the over-abundance of very irritating bile. So that from this, one may see that there was in our soldiers a concurrence of several powerful causes combined to give rise to this inflammation.

Treatment.—The treatment of enteritis differs not from that of gastritis. The principal indication of cure is to combat the inflammatory state. Blood-letting, regulated according to the degree of inflammation, the intensity of the pain, the strength, temperament and age of the patient, are the first means to be employed: general bleeding must be employed when life is endangered by the violence of the inflammation, and when it is necessary to produce a speedy effect: local bleeding is preferable under ordinary circumstances as being less debilitating. These means must be accompanied by a strict attention to regimen; by the application of cataplasms or emollient fomentations over the abdomen; by mucilaginous mixtures or demulcent drinks, such as a solution of gum-arabic, barley-water, marshmallow, &c.; by the employment of mucilaginous and oily lavements, given however in small quantity. In the case of constipation, provided the enteritis owes its origin to the presence of acrid matters in the intestines, we then may administer with advantage, after the abstraction of a sufficient quantity of blood, laxative medicines, such as manna, &c., and above all purgative lavements, which may not only remove these matters, but likewise produce a good derivative effect, if the inflammation does not extend to the large intestines; but we should be cautious in employing the medicines now mentioned when the inflammation is intense, until we have combated it properly by bleeding.

With respect to blood-letting it may be remarked that the physician should not weaken the patient too far; that he should always keep in view the liability of enteritis to change into typhus; for if this change occurs and the strength be too much exhausted, nature has no longer sufficient resources to resist the disease. It is of importance that the bleeding should take place in the three or four first days of the disease: if employed at too late a period, they may be mischievous, and may bring on serious nervous complications. The cautious practitioner will make it a rule not to take any more blood after the fifth day except in cases of absolute necessity. When general bleeding is performed, our author prefers taking blood from the foot. If local bleeding be employed, the practitioner may, for instance, apply over the abdomen, in an adult of good constitution, from twenty to forty leeches and make the bites continue to bleed by means of a warm linseed poultice left on for two or three hours. The application of leeches to the anus is also deserving of commendation; it is principally indicated when the patient suffers from tenesmus, and and when the symptoms should incline us to suspect that the large intestine was involved in the inflammation.

It is almost unnecessary to say that in the case where the enteritis results from a strangulated hernia, operation is oftentimes the chief means required. In cases wherein it arises from suppression of the hemorrhoidal flux, we should endeavour to recall this by the application of leeches to the fundament, and by emollient vapour baths, directed towards this part. In cases where it arises from the repercussion of gout, we must endeavour to direct it towards the extremities by means of the foot bath, sinapisms, &c. Where

it arises from suppression of the transpiration, from rheumatism, or some lurking cutaneous affection, our effort should be to bring it out to the surface of the body, to increase the action of the skin by hot baths, frictions, and sudorific medicines.

If after having sufficiently attacked the inflammation by the means now pointed out, we have still to combat pain, vomiting, diarrhœa or increased sensibility, which happens as in gastritis, we should then employ sinapisms and vesicatories along the back and on the thighs; warm-baths; opium internally; opiate frictions; opiate fomentations, or cataplasms over the abdomen; lavements of poppy-heads, mucilagiuous lavements with laudanum, &c. But if there be fever, or a cerebral affection, we must not administer opium, as it might prove very mischievous.

When the enteritis has come to its chronic state, we must perseveringly continue the emollient and derivative treatment: some demulcent drinks; we must keep up a free state of the bowels by appropriate lavements; we should use derivatives; such as dry frictions along the back and extremities; an issue in the lumbar region, or blisters on the thighs, which should be kept open; warm-baths, in which some aromatic herbs may be infused; opiate frictions, or frictions with the extract of stramonium or belladonna over the abdomen, for the purpose of diminishing excessive sensibility; the use of mild food easy of digestion, &c.; all violent mental emotions and exertions of mind should be avoided; the patient should secure himself against cold, should wear flannel next the skin, should take every day moderate exercise; enjoy country if possible.

With respect to regimen it may be well to remark that we must not subject the patient for too long a time to severe regimen, as is so frequently done at the present day. The privation of the necessary food or too long continued abstinence are very injurious; they deprive nature of her resources, the strength fails, and the stomach becomes inflamed by the accumulation of the gastric juice. Do we not every day see patients who have been exhausted by strict diet regain strength rapidly, as soon as they commence to take proper food. I have frequently seen the bare employment of a mild diet re-establish the health of persons who were affected with acute epigastric pains, with fever and other symptoms of gastro-intestinal irritation, treated ineffectually on the principles of the physiological medicine. These persons had not been allowed to take any thing for whole months, except barley-water, sugared-water and weak veal broth.

Our author having thus given what he considers the best plan of treatment for enteritis in general, next gives a detail of that which he adopted with most success in the French army placed under such extraordinary circumstances. Among the French soldiers, on whom the desease was most frequently produced by a superabundance of acrid and vitiated bile, by indigestible food, by the presence of saburral matters in the primæ viæ, or by the suppression of the transpiration, our author employed tartar emetic, which is generally contra-indicated in the treatment of enteritis and gastritis. This he gave not only with the view of relieving the intestinal canal of an acrimonious bile and of other irritating matters, which it might contain, but also for the purpose of increasing the action of the skin and of promoting transpiration. He assures us that he has uniformly experienced the best effects from the employment of this means, the utility of which in such cases is acknowledged by the experience of ages. If care was not taken to evacuate and destroy by the emetic the cause of the gastro-intestinal superexcitement, the complication with typhus, rapidly came on, in consequence of the irritation which was transmitted sympathetically to the encephalon. Where the inflammation was very intense, and the patient still retained his strength, he gave the emetic previous to bleeding; but exhausted and debilitated as the soldiers generally were, it was not deemed expedient to have recourse either to bleeding, or even to a long continuance of strict regimen.

We are free to acknowledge that we are so far Broussaists as to feel somewhat sceptical with respect to the safety or expediency of employing tartar emetic in inflammation of the intestinal mucous membrane; nor can the peculiarity of position in which the soldiers were placed, nor the unusual or extraordinary causes which gave rise to the enteritic affection in them, at all reconcile us to the treatment here recommended; and did we not know from other sources, that our author had as sovereign contempt for homœopathy as we ourselves have, we might be inclined to suspect that he was one of the dupes of that heresy.

As often as he suspected that the disease was caused by the copious effusion of acid bile into the intestinal canal, con-

sidering the increased secretion of this fluid as caused by relaxation or passive ir itation of the liver, with the use of the emetic he combined frictions with volatile liniment, combined with mercurial ointment, over the region of this organ; emollient drinks, gentle laxative, and a large blister to the abdomen, when the inflammation was now passed the acute stage, constituted the remaining treatment. When the state of irritation gave place to a state of relaxation, which frequently came on between the sixth and twelfth day, he prescribed tonic mixture, such as infusion of camomile flowers, or of absinthium, to which he sometimes added ether, but more especially opium. In our next number we shall close on analysis of this truly valuable work.

On the Nature and Treatment of Diseases of the Heart, with some new Views on the Physiology of the Circulation. By JAMES WARDROP, M.D. to King George IV., Lecturer on Surgery, &c. &c. 8vo., London, 1837. John Churchill.

Our author, like all scientific contemporaries, commences his work with an account of the structure of the organ of which he treats, and then he describes its function previous to detailing its diseases. Here the reader will find much novel information, as indeed there is in every page, as the following extracts prove.

"Before making any observations on the particular diseases of the heart, it may be well to review some of those striking peculiarities in the natural structure and functions of this important organ, to which I shall have occasion more especially to allude, as our pathological investigations require a constant reference to its healthy condition.

"Destined to propel the blood not only to the lungs, but throughout the whole system, the heart is endowed with a *muscular structure*, and this forms perhaps the most essential ingredient in its composition. The muscles of the heart are generally more firm and more elastic than other muscles; and the fibres of which they are composed are more compact, being separated only by a very delicate cellular tissue.

"The heart's muscles are excited to contract by the blood, in like manner as muscles of other organs are stimulated by ihe respective fluids which are naturally in contact with them, as in the instances of the alimentary canal, and the urinary bladder.

"The muscles of the heart are also remarkable for having an unusual number of blood-vessels when compared with those of other muscles, an additional quantity of blood being required to enable them to perform their unceasing actions.

"There is, however, one essential difference in the function of the muscles of the heart from those of all other organs; they *have no repose!* their unceasing action being absolutely necessary for the continuation of life. "How is it," says the illustrious Haller, "that the heart, with its incessant motion during so many years as there are in a life-time, during so many days as there are in a year, and when in each hour it contracts not much less than five thousand times, never resting, but contraction perpetually succeeding repletion,—how is it that the heart is neither fatigued nor pained by so excessive an action, an action which no other muscle could endure even for a few hours?'

"Now it is this difference in the function of the muscles, to which I think may be attributed many of the peculiar feature in the diseases of the heart, and it is also this muscular part of its structure which is found to be most frequently affected.

"With regard to the muscles of the heart, it is easy to comprehend how, when they have been excited to ordinate action, the circumstance of their having no repose to enable them to recover the effects of fatigue must ultimately create changes in their structure, as well as in their function, which would not occur in muscles which can be placed in a state of perfect rest after violent exertion. And, as shall afterwards be pointed out, when the heart's muscles have been over-excited or fatigued a circumstance which is often taking place, they require a distinct system of treatment.

This unceasing action of the heart has, as might have been anticipated, an indirect influence in modifying the diseases of all the textures which enter into the composition of this organ; for, when either its external covering or its internal membrane becomes in the slighteis degree inflamed, that inflammation cannot fail to be increased by the unremitting action of its muscles.

In the composition of the heart there is also a considerable quantity of the *yellow fibro-cartilaginous substance* similar to the fibrous coat of the arteries. This structure commences at the roots of the large vessels where they emerge from the

heart's cavities, and by its elasticity it assists these cavities alternately to expand and contract, and thus to accommodate themselves to the constant changes in the quantity of blood which is propelled into them.

"Besides the muscular and fibro-cartilaginous structures, the heart has a serous capsule, or *pericardium*, which covers it externally, and all the cavities are lined by a serous membrane or *endocardium*, the auricular portion presenting a structure similar to that lining the veins, and the ventricular portion having a lining membrane resembling that of the arteries.

"The *coronary arteries* of the heart are not only of larger dimensions than other arteries, in proportion to the bulk of the muscular structure which they supply, but they present a striking peculiarity in their trajet. These vessels, in place of being encircled by muscles, pass along the tendinous and deep grooves which separate the auricles from the ventricles, by which simple contrivance neither the arteries nor the veins can suffer any compression either from the auricular or ventricular contractions.

"The two coronary arteries supply not only the muscular structure of both auricles and ventricles, and the coats of those portions of the large arterial trunks which are within the pericardium, but some of their branches are also reflected on the pericardium itself. These arteries by inosculating with branches of the internal mammaries, and with the bronchial vessels, establish a vascular connection amongst the different structures of the heart, a connection which is exemplified in many diseases.

"In general, throughout the system, it may be observed, that the blood in the veins flows in an opposite direction to that in the arteries, so that the two streams of blood are, as it were, opposed to each other. But, in the heart, the current of the blood in the large branches of the coronary veins, which vessels are placed alongside of the coronary arteries, runs in the same direction with the blood in the arteries.

"The heart has a smaller proportion of *nerves* than many other organs, and these being derived both from the great sympathetic and ganglionic system explains the influence which the mind exercises on the heart, as well as its sympathies with the respiratory and digestive apparatus,

"Independently of these diseases which are confined to either the pulmonic or systemic heart, each of the heart's structures is liable, as in other organs, into the composition of which such tissues enter, either to be affected separately, or they may be all involved in one disease; and, whenever any part of the structure of the heart is changed, some of its functions become disturbed, and various alterations take place in the distribution of the blood. If, for example, from any change of structure, the blood cannot readily pass from the right auricle into the right ventricle, or from the right ventricle into the pulmonary artery, it will be naturally expected that either of these changes will produce some irregularity in the distribution of the *venous* blood. So, also, a variety of symptoms will arise from a disturbance in a circulation of the *arterial* blood, when either the left auricle or the left ventricle cannot propel the blood in its natural current, or with its usual velocity.

"On contemplating the structure and function of the central organ of the circulation for the purpose of elucidating the nature of its various diseases, it is essential that our researches be not limited to the function of the *heart* alone, but that enquiries be extended to those other organs which are intimately connected with the heart, and which materially contribute to the circulation of the blood."

Our author next describes the various causes of the circulation, and explains many phenomena which will interest all classes of readers.

"Though it may be strictly true that the blood flows in a circle, and that the heart, like a syringe, propels the sanguineous fluid throughout the whole system, there are other physical conditions, necessary for the due performance of that important function—conditions to which we must constantly refer in all our pathological researches.

"It is not only indispensable that a certain *quantity* of the blood be sent to every part of the body, but it is also requisite that the supply to different organs be variously *modified*. In some it is requisite that such supply be always equal and uniform, whilst, in others, it is necessary that the quantity of the blood can be either diminished or increased.

"Of the first of these conditions there is an example in the brain; to which, for the due performance of the intellectual functions, the supply of blood must be always uniform; and of the other we have an illustration in the stomach, to

which viscus, during the process of digestion, the quantity of blood is more or less increased.

"Another illustration of a temporary change in the quantity of blood in particular organs is afforded in the *erectile tissue*, this structure being employed in certain organs for the sole purpose of altering their form in order to enable the organs to which they belong to perform a particular function. Thus the erectile tissue of the nipple becomes injected with blood to enable the infant to withdraw the milk from the lacteal tubes.

"For thus regulating the distribution of the blood throughout the system, we shall find that there are employed no less than five other organs besides the heart; these are the arteries,—the capillaries,—the veins.—the muscles or active organs of motion,—and the respiratory apparatus.

"The *arteries*, whether by an elastic power alone, or by elasticity and muscularity combined, lend the heart an important aid in conveying the blood to the capillaries. I have already stated that it is not requisite that the blood be transmitted to all parts of the body with the same velocity, or that the supply to different organs be at all times uniform. These purposes, as well as to provide for the exigencies which certain organs may demand, when, from our habits or avocations the circulation becomes disturbed, are all fulfilled by particular modes in the distribution of the arteries.

"The length of different arterial trunks,—the different angles at which the branches leave the trunks,—the varieties in the course or trajet of arteries,—the different modes in which they ramify,—and the anastamoses of arteries, are all peculiarities which are contrived to modify the circulation of the blood in particular organs.

"A remarkable difference in the *length* of arteries as well as in the *angle* by which they come off from the trunk, is exemplified in the renal and spermatic vessels, whilst the carotids and vertebrals, and particularly the rete mirabile in quadrupeds,—the arteries of the uterus and of the spleen, and the distribution of the brachial and femoral arteries in the tardigrade animals are each examples of *tortuosities* in the distribution of arteries, obviously intended either to modify the momentum of the blood or to insure a regular supply to particular organs,—such modifications in the blood's circulation being required for the performance of the various functions of the œconomy.

"The *anastomoses* of arteries, as that formed by the coronary arteries of the heart, stomach, and lips, and by the arteries of the iris,—as well as the free inoscultation between the carotids and vertebrals by the basilar, are modifications in the distribution of arteries, which serve the essential purpose of preventing any interruption to the necessary supply of blood to the respective organs. For a similar purpose, some important organs are supplied with vessels from *several* trunks,—as the brain, with its two vertebral and two carotid arteries,—the stomach, with its different vessels, and the eye, with branches both from the internal and external carotids.

"The office either of *diminishing* or of *increasing* the quantity of blood in certain parts of the body at particular times, is a function of the circulation not depending altogether on the heart, but requiring the cooperation of the vascular system. When, for instance, food is taken into the stomach, its vessels become more replete with blood, which additional quantity is derived from the vessels of the spleen, that organ serving the purpose of a receptaculum.—When the intellectual powers are excited, an additional quantity of blood flows into the brain, and so with regard to the erectile tissues of the corpora cavernosa as well as the vessels of the uterus, and testes, whenever these organs are called on to perform their particular functions.

"In like manner we shall find that the heart itself requires a different quantity of lood in its varied conditions, and it becomes an interesting subject of enquiry to discover how that supply of the sanguineous fluid to the heart is always furnished with the requisite regularity; a function which I shall endeavour to show is performed by the muscles.

Prunus lauro-cerasus.—Dr. Bennett, of Charleston, in America, has published some cases of facial neuralgia, in which he has employed externally the distilled water of the prunus lauro-cerasus. The cases were of considerable standing and severity; the relief speedy and permanent. A lotion was made, consisting of four ounces of the laurel water, and one ounce of sulphuric ether, alone, or with from half a drachm to a drachm of the extract of belladonna. With this lotion the affected parts, previously covered with carded cotton, or cotton-wadding, were kept constanty

wet. In two cases, the belladonna was used. Dr. Bennett observes that he narrate more cases, but he believes that those he has already adduced, will be sufficient to prove the utility of the preparation.—*American Journal of the Medical Sciences.*

The London Medical

AND

Surgical Journal.

Saturday, September 23rd, 1837.

NORTH LONDON HOSPITAL.

Importance of the Evidence taken before the Committee in the Lithotrity Case.

In none of our public hospitals could an investigation, implicating the veracity and honour of one of its medical officers towards a student, be more essential to its vital interests, and had not that investigation been instituted, would have more seriously tarnished the character of that school in which it forms a prominent character. We allude to the investigation which is now going forward at the North London, or as it has been lately surnamed (for unworthy reasons which we shall on a future occasion detail) the University College Hospital.

This Hospital it will be recollected, was openly declared to have been instituted, not for the benefit or relief of the sick poor, but for the avowed purpose of instructing students of medicine, and in order to insure its success as an appendage to the *liberal* establishment of Gower Street, or rather for the indirect purpose of increasing the funds of this notable charity by students' fees, its projectors, the well known liberals of the College, had the boldness publicly to announce their intention of procuring and advertising for a surgeon, who should possess such lengerdemain qualifications, as would attract students to the operating theatre, in like manner as the managers of Drury Lane and Covent Garden select for their boards such performers as will draw the most crowded houses. Though this *principle* of selecting a surgeon to the North London Hospital was severely reprobated by several of the more respectable of those individuals interested with the North London Hospital School, even calling forth the well merited wrath of that journalist who had been specially devoted to defend the corrupt measures and fraudulent transactions of the "Close Board of Gower Street," still did the medical phalanx of that school continue to pursue a reckless policy, and appoint an individual as one of the surgeons of their ill-begotten Hospital, avowedly for no other purpose, than to perform operations, and to perform them in such a manner, as would give eclat, and increase the emoluments of their uncharitable and unchristian-like establishment. The consequence of adopting such a mode of recommending themselves as a seminary for the education of youth, has already been what might have been anticipated; and their Hospital has often been the arena of scenes most disreputable to the profession, and repugnant to the better feelings of human nature.

There are Hospitals which were instituted, and which are supported and regulated for no other purposes by the charitable than as asylums for the sick poor, wherein they may obtain all medical aid, given for no other purpose than the alleviation of their bodily infirmities. It was once a sentiment too common amongst our medical officers, that Hospitals were the places most appropriate for *experiments*, but since these unprincipled and licentious individuals have been closely watched by the literary Cerberus, and their mean practices become the subject of continual

and severe animadversion, there are comparatively few of those theatrical exhibitions of bloodshed which so long disgraced the Hospitals of this metropolis.

CHARING CROSS HOSPITAL.

DARING ATTEMPT TO OBTAIN ANOTHER RECOGNITION.

BASE, corrupt, and contemptible, as the conduct of the council of the College of Surgeons has been on far too many occasions, and it has been our painful duty to animadvert on them in this journal, it is but justice to state, that they have refused to grant a RECOGNITION to the Charing Cross Hospital, within the last few days.

Our readers will scarcely credit that the DICTATOR GENERAL conjointly, with his MEDICAL STAFF, should have had the daring effrontery, after the public exposure which had been made of the fraud which they committed on the Council of the College of Surgeons, again to come forward with a petition, praying that their fraudulent institution should be recognized as a fit place for the education of youth.

Two years have scarcely elapsed since, under the immediate superintendence, and with the sanction and support of the DICTATOR-GENERAL, the requisite number of paupers from the adjoining parishes were induced to pay a visit of a few days to the Charing Cross Hospital, in order that the number of *beds* required by the College of Surgeons to enable them to grant a recognition, should be occupied, when the day for the deputation of the Council to visit the hospital was decided upon. The *ruse* was so successful that when the worthy Baronets Cooper and Brodie made their official visit, they were so completely satisfied, that the hospital not only contained upwards of one hundred beds, but that there were absolutely one hundred and twelve in-patients then under the treatment of the medical officers. It was not, however, long until the fraud became the subject of general conversation and severe animadversion, but the Council of the College of Surgeons, from several considerations, had it not in their power to withdraw their recognition, and expose the perpetrators of the base fraud which had been committed upon them, until dissatisfaction and mutiny appeared amongst the troops of the Dictator. It then appeared that Mr. Howship, who was one of the surgeons of the hospital, and who had purchased the office for *five hundred pounds sterling*, was more than anxious to procure the RECOGNITION, without which he could not indulge the most distant of hope of reimbursement; and he was enabled to anticipate this object with the greater certainty, as being himself one of the Council.

The whole matter having come before the Council of the College in a tangible shape, nothing was left for their decision but to consider the propriety of withdrawing the *recognition* surreptitiously obtained, and the manner they should deal with that member of their own Council who was an accessory "before, to, and after" the commission of the act.

It was resolved upon with, we believe, only one dissentient voice, that the *recognition* granted to the Charing Cross Hospital should be withdrawn; and after a protracted and warm debate, it was unanimously agreed upon, that as several other members of the council were implicated in the disposal of official situations, both in hospitals and medical schools, either by direct sale, or by some

species of barter, it would be prudent and judicious to take no steps towards the removal of any individual appertaining to the council.

With the details of these disgraceful proceedings and infamous conduct of the medical officers of the Charing Cross Hospital towards the College of Surgeons, and with the minutes of the proceedings recorded in their own journals, it is not paying the Council of the College any very high compliment to inform their COMMONALTY, that they rejected the *recognition* with those feelings of contempt and indignation which the whole proceedings so justly merited.

Many expressed their surprise, and doubted our veracity as journalists, when we, some time ago, stated that this application to renew the *recognition* of the Charing Cross Hospital was about to be made. But those who were aware of the tottering state of the Medical School at King's College, Strand, and who knew the purpose for which the alliance between their anatomical demonstrator and the Charing Cross Hospital was formed, were quite prepared that one of the first intrigues in which Mr. Partridge would bestow his ingenuity, and display his peculiar talents, would be to effect the *recognition*, as there could be no doubt that had such recognition been obtained, the same talented individuals would have contrived means to further the pecuniary speculations of both these notorious institutions.

The absence of Sir Astley Cooper and Sir Benjamin Brodie from the metropolis when the subject of this new recognition was brought before the Council—the very two individuals who were appointed by that body on the former occasion to report to them the state of the Charing Cross Hospital, as regarded the propriety of granting a *recognition*, must *not* be considered as a mere coincidence, but must be viewed as one of those unaccountable and mysterious combinations of circumstances, which nothing but the profound physiological researches of a Todd, the microscopical observations of a Partridge, or the application of the reflex motory movement doctrines of the great modern Sydenham himself, could by any possibility elucidate or explain.

ANIMAL MAGNETISM,

AT THE

NORTH LONDON HOSPITAL.

(*From the Times, September* 20, 1837.)

We publish the following, because we have been informed that some exhibitions of the revolting imposture which is called "Animal Magnetism," have recently taken place at the North London Hospital. If these displays have been made with any other view than to put the pupils on their guard against the extent and impudence of which quackery is capable, it is very essential that it should be generally known that the North London Hospital is only a seminary for mountebankery. The knowledge of this fact is especially due to parents who have sent their sons there to learn the science of medicine, not to be taught to practice the arts of Charlatans!!!

APPOINTMENT OF A PHYSICIAN TO GUY'S HOSPITAL.

DOCTOR BABINGTON has been appointed to the office of Assistant Physician to this Hospital, an appointment which has given general satisfaction, not only from his professional acquirements, but as a tribute of respect and gratitude to the long and meritorious services of his late esteemed parent, who had for many years

performed the important duties of Apothecary to the Hospital, and who afterwards, from his zeal, ability, and good conduct, was appointed one of the Physician of the Charity.

The appointment of Dr. Hodgkin, one of the Society of Friends, was never seriously contemplated; the ability he showed as curator of the museum, and his nicety in putting up preparations, though fully estimated by the governors, were not considered sufficient recommendations in themselves to qualify him for the office of physician; and however assiduous in his Harrissonian devotions he may have been, and extravagant in his *complimentary* systems to the *friends* of Guy's, they have had no effect in consummating his wishes, and realizing his expectations.

DEATH OF MR. SHERWOOD.

Mr. Sherwood's death, from his long and continued connexion with the medical press, has been a just cause of deep regret amongst a large class of the medical faculty. Mr. Sherwood was not only one of the principal publishers in the metropolis, but contributed more than any other individual to give an impetus to British Medical Literature. To his zeal, industry, and intelligence, we entirely owe the publication of the Cyclopædia of Medicine, the Cyclopædia of Anatomy, and the Cyclopædia of Surgery, in all which works are to be found articles from the pen of many of the most eminent individuals of the medical profession in the united kingdom. Besides these truly national works, Mr. Sherwood took an active part in the publication of the *British and Foreign Medical Quarterly Review*, as well as the *Annals of Medicine*. The first of these periodicals must be considered as one of great labour, and well calculated to promote the diffusion of foreign literature in this country; and the "Annals" must as yet be considered an infantile hebdomadary; it is, however, to be hoped that its conductors will step forward more and more boldly in the Cause of Medical Reform, and that they will co-operate with us in exposing and correcting the numerous abuses and fearful state of corruption which still defaces the portals of our Medical institutions—we say co-operate with us, because it is a lamentable fact that the other Medical hebdomadaries are not likely to promote the good cause; the *Medical Gazette* having openly come forward as the avowed advocate of abuse and monopoly, whilst the *Lancet*, their avowed enemy during its early career, has, on many late occasions, paid no attention to some of the most flagrant abuses, and attempted to vindicate the conduct, and lent itself as the advocate of many notorious jobs, more particularly of the transactions of the University College and North London Hospital. Besides the publications alluded to, Mr. Sherwood is entitled to the credit of having first introduced a *British Medical Almanack*; a work though small, on which he bestowed great labour and attention, and incurred very considerable expense.

THE WORKING OF THE ANATOMY BILL.

In consequence of the repeated remonstances which have been made by various teachers of anatomy in London, Scotland, and Ireland, of the unequal distribution of subjects, and other mal-practices in the administration of the Anatomy Act, the Officers of the Crown have not only dispensed with the services of certain individuals, but regulations have been made at the Home Office which will go far in securing a just distribution of subjects, and be a check to all improper charges in the shape of a *bonus*, and at once secure a prompt attention to all grievances and complaints, whether of the *teacher* or the *student*.

PROVINCIAL AND METROPOLITAN HOSPITALS.

To the Editor of the Medical and Surgical Journal.

Sir—Having served an apprenticeship at a county hospital, and accustomed to read only the *Lancet* and *Medical Gazette*, they gave me an impression that no operations performed by the London pures were ever unsuccessful, until I took to reading your Journal regularly, by

which it appears that there are not only a number of operations performed very unsuccessfully, and for the purpose of making a theatrical display to the students; but many of them are completely unsuccessful, and not a few prove fatal. The lithotrity case at the North London Hospital, though highly interesting and instructive, proving the danger of that operation in inexperienced hands, was to me more than equalled in importance by the fatal Taliacotian operation, performed by the surgeon. There are men, I do think, rash and unthinking enough to undertake operations which they cannot perform, and which endanger life. But few young practitioners are aware that one of the minor operations, such as the Taliacotian, should, when performed under unfavourable circumstances, or the patient treated injudiciously after the operation, prove fatal. It will, therefore, be highly instructive and satisfactory to your numerous readers, if you could find out and publish in your valuable Journal an account of the Taliacotian operation in the case alluded to, which proved so rapidly fatal.

In our provincial hospital, operations might have been sometimes performed unnecessarily, but scarcely ever a *fatal case* occurred during my five years apprenticeship. It was a fixed rule with both Mr. S. and Mr. H. never to operate in any case where delay was admissible, without preparing the patient by a proper course of purgatives, alteration in diet, &c.; and after an operation had been performed, they always appeared to pay the strictest attention to the after-treatment, disregarding dressings and bandages in comparison to the patient's general health and constitution. In all cases where the patient's health remained in a bad state, notwithstanding their efforts to improve it, nothing would have induced them to perform an operation: and, as Mr. H. often used to tell his apprentices, if they could not save life, it was their duty, as Christians, not to take it away!!

Your constant reader,

G——r, September. J. W.

[The death of the patient alluded to, could be very satisfactorily accounted for, by the very bad state of his general health when the operation was undertaken. His state of debility was such, that he was unable to stand the shock of the operation.—*Ed.*]

CLINICAL REPORTS.

EDINBURGH INFIRMARY.

CANCER OF THE UTERUS.

M. H., a widow. thirty-nine years of age, and who has borne children, was admitted into hospital, complaining of pain in the hypogastic region, much increased on pressure; with constant aching pain in the back. She has also very severe bearing down pains, and pain in passing urine, which is scanty, fetid, and throws down a white mucous deposit. There is a sense of weight, accompanied by pains in the forehead. Pulse a hundred; tongue natural. The bowels have been more open than they ought to be for the last two days.

About ten months ago, on passing through a small stream while the catamenia were present, their flow was arrested; and, a fortnight afterwards, she was attacked with severe pain in the bowels, resembling cholic; for which various purgatives and other medicines were taken. She got better in about a month, but shortly afterwards, on making great exertions, a copious discharge took place from the vagina, resembling the menses, but lasting for three months, though in diminished quantity. When this discharge ceased, violent flooding took place, and recurred after a month's interval; since which there has been a constant, fetid, yellow discharge, which has lasted to the present time, a period of more than four months. It is two months since the pain in the back came on.

This patient remained in the hospital till her death; which did not take place for nearly three months. The treatment, however, may be summoned up in a very short space. It consisted chiefly of opiates of various kinds, and in different forms; sometimes by the month, and at other times by injection. She uniformly complained, however, of being hurt by the introduction of the enema-pipe; probably from the rectum being engaged in the cancerous degeneration. Leeches were occasionally applied to the hypogastrium, especially the right side; where a tumour gradually forms hard and irregular, extending far into the right iliac region, purgatives were frequently necessary; and consisted principally of colocynth and hyosciamus pills, or castor-oil, with a few drops of some anodyne tincture. A solution of acetate of lead, and afterwards a decoction of poppy heads, was ordered

to be thrown up the vagina; but these injections she refused to allow, on the score of shame; of which, according to her own account, she had an abundant stock. The same feeling prevented an examination being obtained, till a few days before her death; when the upper part of the vagina was felt to be closed up by irregular, hard projections, no doubt consisting of depositions of scirrhous matter, into which the uterus had degenerated; and an extension of which, there is little doubt formed the tumour in the hypogastrium. Nothing like the neck or mouth of the womb could be discovered.

Considerable mitigation of pain was obtained by the opiates; but the debility, emaciation, and that peculiar leaden hue, so characteristic of these cases, progressively increased. For the last week, quiet nights were procured by the administration every evening of a pill, containing a grain of the muriate of morphia; equal in strength to about four grains of opium; besides which she took daily three or four pills, containing a grain and a half of opium in each. In the latter stages of the disease, she was allowed wine, beef steaks, and eggs. Her intellects remained clear to the last; for she knew me late on the evening before she died; but on going to her bed next morning, I found her dead. She had been left only a few minutes before by her sister. The latter, to whom a general order of admission had been given, to see her sister whenever she pleased, at first willingly consented to have the body examined; pretending to be very grateful for the kindness which had been shown to both; but when she found there was no money forthcoming, she recalled the permission. This was the reward for all the expense and trouble of maintaining and treating this patient, whom it was disgusting to approach, on account of the horribly fetid discharge. It is a specimen of the gratitude but too often met with in such cases. During the progress of the case, the following remarks were made.

Clinical remarks by the attending Physician.—This is a melancholy case. The symptoms are pain in the hypogastrium and the loins, menorrhagia, bearing down pains, a constant diarrhœa, hectic. My belief is, that it is utterly hopeless. We can only attack the symptoms as they arise. Emollient enemata ought not to be neglected here; as the feces are liable to lodge in the rectum, and to increase the uterine irritation. Purging, however, would be most injurious; for by irritating the bowels, it would increase the sufferings of the patient. Opiates administered by the mouth, do not appear to have so powerful an effect, as when administered through the rectum; for in the latter case they act locally, as well as generally. We have now substituted a solution of morphia for laudanum, as it causes less nausea. The pain often ceases altogether in the last stage, which excites great surprise when the ravages of the disease are revealed by dissection; but sometimes the pain is agonizing, and attended by delirium. Such cases have been remarkably prevalent of late. Death is inevitable.

INDIAN MEDICINE.

MADRAS EYE INFIRMARY.

Communicated by W. Rose, Esq., Assistant Surgeon to the Madras Army.

AMAUROSIS FROM WORMS.

Lutching, a Malabar woman, aged twenty-five, of a thin spare habit of body, was admitted into the Madras Eye Infirmary, on the 10th of September, 1835, under the care of Dr. Mortimer (in temporary charge of the Hopital during the absence of the surgeon, T. Moore Lane, Esq., on sick leave at the Neilgherries.*) She complained of total loss of sight in both eyes, attended with pain of the temples, occasional shooting along the forehead, and also of the occiput. On examination the eyes appear nearly in their natural state; the ball full and firm; cornea lustrous and clear; humors transparent; but the iris is immoveable in both, and that of the left eye rather of an angular shape.

The whole surface of the body is covered with a psorous eruption; skin cool; pulse eighty, and rather feeble; tongue white, large, and flat, and present-

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* Mr. Moore Lane is one of the most dexterous and successful operators on diseases of the eye of this age. Like Mr. Lawder, he is an ornament not only to Indian but to British Surgery. We are deeply indebted to Mr. Rose for these valuable reports. We feel great gratification that an old pupil of ours should evince so much practical knowledge, though we long since augued this, from his zeal, industry, and talent in the pursuit of his profession.—Ed.

ing, in rather a marked degree, the speckled appearance; menstrual discharge regular; bowels open every day; abdomen natural; no pain even on considerable pressure; appetite pretty good.

States that she is a married woman and has four children; has been blind for the last two months; cannot attribute the disease to any particular cause; never received any injury on the head, nor had she had ever any affection of her eyes before the present. About three months ago she found the sight of the right eye weak; it became gradually worse, and at the end of a fortnight the left became similarly affected; the sight gradually diminished in both, but she became completely blind of the left eye a few days before sight failed in the right.

The psorous affection has been of about three months' duration.

She applied to a native practitioner, who gave her some medicine; but she fancies she became worse under his treatment.

Descendat in balneum tepidum statim et capiat hora somni pilulæ hydrargyri, grana decem.

R.—Solutionis sulphatis magnesiæ.
Aquæ menthæ sativæ, āā ʒx.
Fiat haustus cras primo mane sumendus.
Low diet.

11th.—Bowels opened two or three times; stools clay-coloured and slimy; pain of temples and occiput as before; the other functions same as on admission.

Applicentur hirudines duodecim temporibus, et emplastrum lyttæ nuchæ.

Rep.—Pilulæ hora somni, et haustus catharticus cras primo mane.

12th.—Pain of the temple and occiput rather less; leeches bled freely; bowels opened four times; stools much of same character as before; vision not at all improved; psorous eruption continues same as before.

Rep.—Balneum statim et postea perfricetur corpus peroptime unguento sulphuris composito.

Rep.—Pilulæ hora somni et haustus cras mane.

14th.—Bowels opened freely; stools much of the same character as before; psorous eruption dying away; pain of the the temples and forehead rather more severe this morning; vision continues unimproved; the other functions continue as before.

Repetentur hirudines temporibus.

R.—Pilulæ hydrargyri, gr. iij.
Extracti hyoscyami, gr. x.
Fiat pilulæ tres, h.s.s.

R.—Olei ricini, ʒss.
Aq. menthæ piperitidis, ʒj.
Sit haustus cras mane sumendus.

16th.—Pain of head much relieved; psorous eruption nearly gone; bowels opened three times yesterday; alvine dejections more natural; vision still unimproved; tongue continues in the same state as on admission, the speckled appearance if anything more developed, and the dental impressions strongly marked on the sides of the organ; in other respects as before.

Rep. balneum, et postea frictio cum unguento sulphuris composito.

Cont. pilulæ hora somni et capiat haustum sequentum cras mane.

R.—Olei ricini,
—— terebinthinæ, āā ʒss. M.

17th.—Pain of temples quite gone; that of the occiput still troublesome; bowels opened three times since last report; stools slimy and whitish; tongue as in yesterday's report; other functions continue as before.

Rep. emplastrum epispasticum nuchæ.
Pilulæ et haustus ut antea.

18th.—Head quite free from pain; bowels opened three times; dejections nearly of the same character as yesterday, but with the last she passed four lumbrici, each from ten to twelve inches long; vision unimproved; other functions as before.

Repetantur pilulæ et haustus.

19th.—Passed five more lumbrici since yesterday morning, of about the same length as the former; dejections of the same character as before; vision still unimproved; head continues free from pain; other functions as in last report.

Cont. omnia.

20th.—Nine lumbrici have been passed since yesterday morning, of the same size as the others; alvine dejections somewhat improved in appearance; tongue still presenting the same characters as before; vision unimproved; in others respects as before.

Rep. omnia.

21st.—Passed four worms since last visit; stools more natural; vision in right eye somewhat improved; when the hand is drawn slowly before the eyes, says she can perceive some dark object; left eye continues as before; head still free from pain; psora quite gone.

Perstat.

22d.—Two worms expelled this morning, rather longer than the former and quite black; character of dejections more

natural; vision in the right eye greatly improved, can distinguish objects also with the left this morning; in other respects as before.

Pergat.

23rd.—Three worms expelled since last report, of the same length and colour as the last, making on the whole twenty-seven; sight of both eyes much improved; alvine motions of a better colour and consistence; tongue cleaning; the remaining functions regular.

Perstat.

26th. No more worms; vision much improved; can walk about the compound unaccompanied; head free from pain; tongue nearly quite clean; other functions natural.

Rep. pilulæ hora somni, repatatur haustus.

30th.—Vision quite restored; no more worms; says she feels quite well, and wishes to be discharged; all the functions natural.

Cont. pilulæ.

1st Sept.—Discharged—cured.

MADRAS GENERAL HOSPITAL.

DYSENTERY FROM WORMS.

Amelia Howard, aged nine, of European parentage, and of a lencophlegmatic temperament, was admitted into the Madras General Hospital on the 22d July, 1835. Complains of occasional griping pains of the abdomen, with relaxation; bowels moved several times in the day; slight pain, on pressure, along the course of the colon, but not confined to any particular part; tongue foul in the centre and at the root, but the tip and edges are clean and moist, and the entire organ presents a peculiar kind of speckled appearance; pulse 120, small and compressible; skin cool and moist.

Before admission this morning took a table-spoonful of castor-oil, which acted four or five times on the bowels; stools yellow, liquid fæculent, and containing several small flakes of mucus, very offensive, but unaccompanied by tenesmus, or any appearance of blood; no particular pain on pressure about the right hypochondrium or caput coli.

Her mother states, that the girl has been ill for the last twelve or thirteen days; has been frequently purged, and the stools contained "matter and blood;" took castor-oil occasionally; has observed no regularity in her diet; her bowels, previously to her illness, have been confined, but in other respects has always been very healthy.

Foveatur abdomen benè—Spoon diet.

Vesperè—Had three stools during the day, the two first fæculent, yellow, and of a good consistence, the last scanty and contained a small quantity of blood and mucus; no tenesmus; urine copious and clear; all the other functions as in the morning report.

R.—Hydrarg. chlorid.
Pulveris ipecacuanhæ, āā gr. iij.
Fiant. pilulæ duæ, hora somni sumendæ.
Habeat olei ricini ʒss. cras mane.
Continuantur Fomenta.

23rd, six, A.M.—Slept pretty well last night; bowels opened twice; stools fæculent, rather dark-coloured, containing mucus and blood; urine copious and clear; tongue moist and rather clean, speckled appearance more marked; pulse 100, and small; skin rather warm; complains of slight tenderness on free pressure over the abdomen; appetite pretty good.

R.—Pulveris ipecacuanhæ.
——— acaciæ, āā gr. ij.
Fiat. pulvis secunda quaque hora sumendus haustus primo mane ut antea.

24th, six, A.M.—Had a tolerably good night; bowels opened four times since last report; stools fæculent and dark-coloured, except the last, whcih was rather copious, and consisted entirely of muco-sanguinous matter, accompanied with a distressing tenesmus; all the other functions as in last report.

R.—Pulveris ipecacuanhæ,
——— acaciæ, āā gr. iij.
Sit pulvis secunda quaque hora capiendus.

R.—Pil. hydrargyri,
Pulv. ipecacuanhæ, āā gr. iij.
Fiant pilulæ duæ, hora somni sum.
Repetatur oleum, cras mane.
Continuentur Fomenta.

25th.—Passed a sleepless night; bowels opened three or four times; dejections still rather dark-coloured and fæculent, and containing a considerable quantity of blood and mucus; tongue as before; pulse 100 and small; skin cool and soft; tenderness of abdomen still continues; yesterday every dose of the ipecacuan was rejected by vomiting.

R.—Pulveris ipecacuanhæ.
——— acaciæ, āā gr. ij.
Fiat pulvis, secunda quaque hora sumendus.

Continuantur fomenta pilulæ duæ hora somni et haustus cras mane.

25th, six, A.M.—Had rather a restless night; bowels opened three times since last report; stools yellowish, fæculent, and containing a considerable quantity of muco-sanguineous matter; tenesmus; pulse ninety and small; skin cool and soft; urinary excretion natural; appetite rather immoderate; abdomen somewhat tense and still, painful, but not particularly so; lips rather parched; speckled state of the tongue particularly marked this morning.

I directed the attention of Dr. Mortimer, Chief Surgeon to the Hospital, to this peculiar state of the tongue, and he remarked, that during the course of his long practice in India, he had invariably observed this state of tongue, both in natives and Europeans, as symptomatic of worms in the intestinal canal; and that in the present case, considered in connexion with the state of the appetite, abdomen, and lips, there was a strong presumption in favour of such a diagnosis. He recommended, then, that the patient should continue her medicines as before, have her pills at night, and the following draught to-morrow morning.

R.—Olei. ricini,

—— terebinthinæ āā ℥ss.

Fiat haustus.

Continuantur Fomenta.

27th, six, A.M.—Spent rather a better night; slept pretty well; bowels opened three times this morning; dejections rather fæculent, lighter coloured than usual, containing mucus and blood, and with the last she passed a lumbricus teres, nine inches long; tongue and abdomen as before; skin cool and moist; the other functions as in yesterday's report.

Continuantur omnia.

38th, six, A.M.—Spent a quiet night; two alvine evacuations since last report, of nearly the same character as before; as in the first she passed two more lumbrici of the same length as the former one; tongue becoming cleaner; abdomen less tumid and painful; appetite more natural; pulse ninety and small; skin cool and soft; the other functions as before.

Continuantur omnia.

29th, six, A.M.—Passed a good night; slept well; bowels opened four times yesterday; motions yellow and fæculent, but of a curdy appearance without mucus or blood; no more worms passed; tongue cleaner; the other functions as before.

Rep. pulveres et pilulæ hora somni.

30th, six, A.M.—Complained of pain in both ears last night; they were fomented, which relieved her; bowels opened three times; dejections more natural; tongue still a little speckled; pulse pretty regular; skin cool and soft; urine natural; had some castor oil this morning.

Continuantur pulveres pilulæ hora somni et oleum ricini cras mane.

31st, six, A.M.—Says she feels quite well; bowels not opened since yesterday morning; tongue clean, speckled appearance quite gone; pulse natural; tumid state of abdomen subsided; no pain on free pressure; all other functions natural.

Perstat.

August 1st.—Feels quite well; bowels opened two or three times yesterday; stools natural; no worms passed; all the remaining functions regular.

Discharged.

[These cases are extremely instructive, in relation to that of apparent tetanus in our last number.—Ed.]

EXPERIMENTS

On the Effects of the Hydrated Per-Oxyde of Iron as an Antidote to Arsenious Acid.

By Dr. Von Specz, Professor of Chemistry in the Theresian Acadamy of Vienna.

In the year 1834, as our readers are aware, Dr. R. W. Bunsen and Dr. A. A. Berthold published a small work at Gottengen, on the use of hydrated per-oxyde of iron as an antidote to arsenic, in which they claimed for this remedy all the properties of a true specific. With the view of testing the accuracy of their results, Dr. Von Specz prepared a large quantity of the hydrated peroxyde of iron, and instituted a series of experiments with it, on animals.

Experiment 1. On the 5th of October 1834, at ten o'clock in the forenoon, twelve grains of white arsenic, mixed with a portion of boiled meat, was administered to a cat six months old. At twelve, retching and vomiting commenced. An attempt was made to administer the antidote mixed with water, by means of a tin funnel, but the animal wae so extremely restive, that no more than a drachm of the hydrated peroxyde could be given. Death occurred about one o'clock.

Experiment 2. On the 15th of June, 1835, at ten o'clock in the forenoon, a scruple of the white oxyde of arsenic was given in some sausage to a dog six months

old. Half an hour afterwards, Dr. Von Specz attempted to introduce the antidote, by means of a syringe furnished with an elastic tube. The dog, however, bit the tube, and was otherwise so unmanageable, that scarcely any could be administered. He died at half-past twelve.

Dr. Von Specz finding that the hydrated peroxyde of iron could not be given in a sufficient dose in this way, made the following change in the mode of exhibition.

Experiment 3. On the 28th of October, 1835, at ten o'clock in the forenoon, a drachm of finely powdered arsenic was administered to a mastiff six months old, which had been sparingly fed the day before. About five minutes afterwards, an ounce of the dry hydrated peroxyde of iron, finely powdered, and mixed with a sufficient quantity of fryed liver pudding, was laid before him. He ate the whole, and afterwards drank about three ounces of milk. About eleven o'clock, he had some fluid evacuations from the bowels, but still appeared lively. About three o'clock P. M. he looked dejected, went to his bed, and lay there quietly; during the night he had five fluid evacuations. On the 29th, he looked dejected, did not stir from his bed, and neither ate nor drank. On the 30th he ate a little meat, drank about six ounces of milk, and returned to his bed. On the morning of the 1st of November, he was quite lively, and ate every thing that was offered to him.

Experiment 4. On the 10th of December, 1835, at ten o'clock in the forenoon, a drachm of finely powdered arsenic was given in some pudding to a bitch twelve months old. Five minutes afterwards, an ouuce of the antidote was given, mixed with liver pudding, the whole of which was devoured by the animal. At eleven o'clock she went to her bed, appeared shy and timid, and refused to eat. She remained quietly in her bed the whole night, without vomiting or purging. On the morning of the 11th she had three fluid evacuations from the bowels, and did not appear to be ill; on the 12th she was running about as usual.

The foregoing mode of exhibiting the antidote to animals may be employed until vomiting commences; after this occurrence, it must be administered by means of a syringe.

As one sixth of the quantity of arsenic administered in Experiments 3 and 4, is more than sufficient to kill a dog, Dr. Von Specz looks upon the hydrated peroxide of iron as a true specific, and thinks that its failure in any given case is to be attributed to its being employed too late, or given in too small a quantity. In order to ensure the giving of a sufficient dose, ten times the quantity of hydrated peroxide of iron must be administered; but a much larger quantity may be safely given, as this remedy does not exercise any deleterious effect on the animal œconomy. In order to obtain the remedy in a state of purity, and free from any admixture of copper, he recommends the precipation of the iron by ammonia, and states that this preparation when properly made, and preserved in bottles with good glass stoppers, will retain its virtues for a very considerable time. The following is the mode of exhibition which he recommends in cases of poisoning by arsenic.—R. Olei Amygdal. dulcis, Pulv. Gummi Arabici, Pulv. Sacchari Albi *aa* ℥ij. tere simul et affunde, sensim terendo, Aquæ destillatæ ℥xv.; Hydratis Ferri ℥iij.; of this mixture, previously well shaken, a dessert-spoonful is to be given every three minutes.

Dr. Von Sprecz resumed his investigations the following year, but instead of the pure hydrated peroxyde, he employed substances in which it is known to exist in considerable quantity, and which require no previous preparation, namely, rust of iron, and hæmatite (red iron ore.)

Exepriment 1. On the 16th of January, 1836, at ten o'clock in the forenoon, a drachm of finely pulverized arsenic, mixed with about an ounce of fryed liver pudding, was given to a dog twelve months old. Immediately afterwards, a mixture of two ounces of hæmatite with seven ounces of liver pudding was offered to him, the whole of which was devoured, and then drank a small quantity of milk. Forty minutes afterwards, he was attacked with violent retching; the anterior extremities were extended spasmodically forwards, and the posterior drawn backwards, as is usual in cases of poisoning from arsenic; he also had severe vomiting, and convulsive spasms of the abdominal muscles. At eleven o'clock he went to his bed and was peevish; the retching continued during the afternoon, and he had five dark-coloured evacuations from the bowels. On the 17th of January, he remained the whole day in his bed, refused to eat or drink, and had six dark-coloured evacuations. On the 18th he appeared quite lively, sprang to meet the servant, and ate and drank with much desire.

Experiment 2. On the 19th of March, 1836, at eleven o'clock in the forenoon, a drachm of finely powdered arsenic, mixed with three quarters of an ounce of liver

pudding, was given to a dog four months old, and immediately afterwards an ounce and a half of rust of iron mixed with six ounces of liver pudding. The animal ate only three fourths of the antidote, and then drank a small quantity of milk. At half-past eleven he vomited, but still appeared lively; at one o'clock he had a green evacuation from the bowels. During the afternoon he had five alvine evacuations and frequent retching, but no vomiting. In the evening he went to his bed, and remained there quietly during the night; on the morning of the 20th, he had several dark brown fluid evacuations, but was in other respects lively, had a good appetite, ate bread, and did not exhibit the slightest trace of illness.

Experiment 3. On the 19th of March, 1836, at two o'clock in the afternoon, a drachm of finely powdered arsenic, which had been previously dissolved in two ounces of hot water, was poured down the throat of a dog four months old, while the solution was still warm, by means of a tin funnel, and about ten minutes afterwards, an ounce and a half of rust of iron, mixed with a quantity of milk, was administered in the same way. Five minutes afterwards, the dog was attacked with convulsions and retching, and dropt down as if dead: after fifteen minutes, he got up, crawled into a corner, and vomited violently. During the night he had several dark-coloured alvine evacuations. On the 20th he was sullen, and refused to eat; on the 21st he was fresh and lively, and greedily ate some bread offered to him.

Experiment 4. On the 24th of March, 1836, at nine o'clock in the forenoon, a drachm of arsenic, mixed with an ounce of liver pudding, was given to a dog four monnhs old, and then an ounce and a half of hæmatite, mixed with five ounces of liver pudding: the animal devoured the whole. Forty minutes afterwards, he was attacked with retching and convulsions followed by severe vomiting; as soon as the retching ceased, he ate up again what had been ejected from the stomach. At twelve o'clock he began to vomit again, became dejected, and went to his bed; he whined, retched continually, and his jaws where covered with a whitish foam. During the afternoon he had several alvine evacuations of a reddish colour, trembled, and was affected with constant retching and covulsive twitches. In the evening he was more tranquil. On the 25th he was quite lively, sprang to meet us, and ate with a good appetite.

Experiment 5. On the 24th of March, 1836, at eleven o'clock in the forenoon, a drachm of finely pulverized arsenic, mixed with an ounce of liver pudding, was given to a dog three moths old, and immediately afterwards an ounce and a half of lapis hæmatites mixed with five ounces of liver pudding; the animal consumed only two thirds of the antidote. Twenty minutes afterwards he began to vomit, and at the same time had an evacuation from the bowels: he was then attacked with retching, vomiting, and convulsions, which lasted until one o'clock; during this time he vomited six times. At two clock he became dejected, shivered, and sought his bed; the retching was extremely severe, and his jaws were covered with foam. These symptoms disappeared about eight o'clock in the evening. On the 25th, he remained in his bed; about ten o'clock in the forenoon, he vomited twice a white frothy fluid; at eleven, he had some fluid evacuations from the bowels. On the 26th, he had several greenish-brown evacuations, but appeared lively and ate with appetite.

From these experiments Dr. Von Specz is led to conclude, that rust of iron and hæmatite, although they do not prevent all the bad effects of arsenic on the system, may, in defect of the hydrated peroxyde of iron, be employed as antidotes to that poison. To the hydrated peroxyde, which is capable of neutralizing all the deleterious properties of the poison, he assigns the first rank as an antidote to arsenious acid, next to this stands rust of iron, and then *sed longo intervallo*, hæmatite, which in consequence of its slow operation, may be used without any beneficial result where the poison is exercising a very powerful action on the system. Experiments 1, 4, and 5, of the second series, show distinctly the predominant influence of arsenic on the system, although hæmatite was administered immediately after the poison, and before its specific effects could be produced. The animals, it is true did not die, but the counteracting powers of the antidote were not manifested until nearly three hours after its exhibition. These objections do not apply with any thing like the same force to rust of iron, which Dr. Von Specz thinks may be advantageously employed as an antidote in defect of the hydrated peroxyde. Its great efficacy as an antidote is shown in Experiments 2 and 3 of the second series. The remarkable effects of the arsenic in Experiment 3 are to be attributed to the mode of administration, for

Dr. Von Specz has repeatedly found that the poison operates much more rapidly when introduced into the stomach in a state of solution. A drachm of arsenic in powder does not produce its deadly effects on the system in less than six or eight hours, while the same quantity dissolved in warm water destroys life in a much shorter time. Rust of iron has also the additional advantage, that it can always be procured with facility.—*British and Foreign Medical Quarterly Review.*

CASE OF POISONING BY LIQUOR POTASSE.

By Darto-Massart, Pharmacien at Mons.

Mr. D., aged thirty-five, drank, instead of wine, a quantity of water of potash. Soon perceiving the error, he complained of severe pains in the epigastric region and nausea, and, in the course of a quarter of an hour, of general coldness; face pale, presenting the appearance of intense suffering. A solution of tartaric acid was administered, (four drachms to the pint of water,) and given at short intervals. Sinapisms were applied to the feet, and emollient fomentations to the abdomen, with frequent enemas. In a short time the symptoms abated, and he began to grow warm; a slight perspiration continued for two hours, followed by a black stool. Two days after, the tongue and back part of the mouth threw off a very thick and tough membrane. The patient took small quantities of broth, and shortly recovered his health.—*Ib.*

ON THE TREATMENT OF VARUS AND PES EQUINUS, BY THE DIVISION OF THE TENDO ACHILLES.

By Dr. Bouvier.

Dr. Bouvier presented to the Academy of Medecine (1) the extensor tendons of the foot of a dog, which had been divided, thirty days before it was killed; (2) a man aged forty-six, whom he had cured of pes equinus, by a division of his tendo achillis. The divided extremities in the case of the dog were united by solid substance, which was an inch in length, consisting of a new fibrous tissue, having externally the form and appearance of the tendon itself, adhering loosely to a cellular sheath in which it was enclosed, so as to fulfil perfectly, as far as solidity and mobility were concerned, the functions of a tendon. It illustrated comparatively the case of the man. The deformity of his foot had existed from infancy. The section of the tendo achillis was performed in the month of February. At the present time (October) it is difficult to ascertain the point at which the tendon was divided, although, immediately after the operation, the extremities were placed more than an inch apart, and this distance has since increased. The foot forms a right angle with the leg, the heel resting on the ground both whilst standing and walking, and the muscles of the calf act upon the calcaneum, so as to extend the foot as before the operation. The treatment lasted only fourteen days.

In a subsequent paper, Dr. Bouvier records other cases successfully treated both by himself and others. His mode of operation is as follows. The patient lies upon his belly. A slight incision is made with a lancet, parallel to the axis of the limb, a few lines in length, and at that part where the tendon is the smallest and the least prominent. Through this incision is introduced, beneath the skin, a small straight knife, with a blunt point. The tendon is then divided from without inwards, without wounding the integuments. The limb is then placed in such a way as to keep the ends of the tendon separated, the foot being flexed on the leg. The subsequent treatment is very simple. It consists in gradually increasing the flexion of the foot, until it forms an acute angle with the leg: this is accomplished in an indefinite time, according to the condition of the articular surfaces of the tarsus. If, conjointly with the elevation of the heel, the foot is turned inwards, the apparatus must be so constructed as to correct this deviation. The reunion of the tendon takes place rapidly. The cicatrix is of considerable solidity, by the fifteenth or twentieth day. Two of the six patients operated on were affected with varus; one being a young man, twenty-three years of age; the other, a female aged fifty-four. The form of the foot in each case was greatly improved. The other four as well as a patient operated on by M. Roux were completely cured. They all were affected with pes equinus. —*British and Foreign Medical Qarterly Review.*

FRACTURE OF THE SKULL

And Rupture of the Longitudinal Sinus during Natural Labour.

By Dr. Michaedis, of Kiel.

A woman, aged thirty-six, was taken in labour with her first child on the 27th February, 1836. After slight pains for thirty-six hours, the waters came away at four P.M., of the 29th. At this time the midwife found the os uteri open, but full and hard. At eight o'clock on the following morning, Dr. M. was called, and found the patient, as is common in Germany, on the labour-chair, with sufficient but not severe labour pains, the vagina extremely tender, dry, and hot, and the perineum tense, and the child's head completely in the pelvis. The woman was put into bed, and warm cataplasms applied to the genitals; and in two hours things were completely changed, the parts being now only moderately swelled, lubricated, and not painful, while the head advanced under good pains, only apparently strongly jammed against the immoveable coccyx. At eleven o'clock the child was born. Examination immediately after the child was born detected no deformed of the pelvis, the diameter of the outlet being certainly not less than three inches and three quarters. The child breathed both during birth and immediately after, but then died.

The head was much disfigured, and, on examining it carefully, the following appearances were found: 1. The frontal bones were normal as to structure and uninjured, but so flattened that the frontal and parietal portions lay nearly in the same place. 2. The fontanelle and anterior two-thirds of the sagittal suture projected high up, and the sagittal borders of the parietal bones were thrown open and partook of the displacement. 3. The left parietal bone was not otherwise affected, and, with the exception of a few points which were very thin, it was well-formed. 4. In the posterior third part of the sagittal suture, where the parietal bones were firm and well formed, and the suture only two lines in width, were seen small livid portions of the longitudinal sinus forced between the bones. 5. The occipital bone was flattened and forced deep under the parietal bones, but not otherwise injured. 6. The right parietal bone, which during the birth had been directed towards the promontory of the sacrum, was found covered anteriorly and above with effused blood, and, on removal of the periosteum, was found fractured in five places. These fractures or fissures were as follows: *a.* a small fissure near the *tuber ossis frontis*, four lines long; *b.* a much larger one running from the fontanelle through the centre of the parietal bone, very nearly two inches in length; *c. d.* two small fissures half an inch in length, near the sagittal suture. There were also four small openings, from incomplete ossification, in the same bone, which was throughout very thin.

On opening the skull, there was found no extravasation beneath the fissures, but posteriorly, under the sagittal suture, the longitudinal sinus was found ruptured, and their was an extensive coagulum on the cerebrum on both sides, under the dura mater, and on the tenterium cerebelli.

The peculiarity of this case is, the occurrence of so extensive injury during natural labour, and with a well-formed pelvis; and is explained by the natural weakness of the bone, and the unfavourable position of the head during birth.—*Ibid.*

ACCOUNT OF A NEW INSTRUMENT FOR PLUGGING THE POSTERIOR NARES.

By M. Martin Saint Ange.

This instrument (which its inventor M. Saint Ange, names *Rhinobyon*,) consists of a straight canula of silver, five inches long, and of the diameter of a crow-quill. To one extremity is attached, by means of a circular groove, a small delicate bladder; the other, slightly belled, is furnished with a stop-cock; between this and the centre of the canula runs a slide (*curseur*) with a projecting tongue.

In a case of epistaxis, the bladder extremity of the instrument is passed through the affected nostril to the posterior nares; air is blown in through the bell mouth; the cock is closed; the moveable tongue prevents the descent of the instrument into the pharyux by its pressure against the ala or septum of the nose, and is securely fixed by a screw. Air has been found preferable to cold water. A portion of intestine about three inches in length, or other similar membrane, might be made to fulfil the double indication of plugging the nares posteriorly, and of exerting pressure on the nasal walls.—*Ibid.*

LITERARY INTELLIGENCE.

Preparing for the press, the Law of God, and the Law of Man, considered with reference to the Punishment of Death. By William Hempson Denham.

TO CORRESPONDENTS.

Inquirer.—The editorial functions have been chiefly performed by Dr. Roderick, since the death of the illustrious Cumnin.

House Surgeon.—We would recommend him to put the patient through a course of the "Mistura Gregorii" cum aliis, as recommended in the Medico-Chuirurgical formulary.

An Army Surgeon.—We do not know whether the amputation performed on his medical friend was the cause of death. It is quite certain it was not the means of prolonging life. In malignant diseases, operations, however rapidly performed, are, we lament to say, too frequently unsuccessful, and they usually hasten the patient's death.

Argus.—Most assuredly,—a chartered body has the power, not only of *reprimanding* but of *dismissing* him.

Vaccinator.—There are only three *Directors* that we know of, besides those of the East India Company—the Director-General of the Army Medical Board—the Director-General of the Vaccine Institution—and the Director-General of Charing-Cross.

Humanitas—The "beautiful house" is not ocuupied by Dr. Golding. The enormous rent may be for the purpose of frightening away tenants.

A. M.'s case is complicated, and is one *de omnibus rebus.* The brain and spinal chord, the respiratory and circulating organs, as well as the chylopoietic viscera, are all in a more or less disturbed state, and each requiring the strictest attention,

Cantab.—Moscati is still in town, and the information may be had on the subject by a personal application.

Bos.—There is only one other instance of *rumination* in the human subject.

Animal Chemist—The indistinct appearance of the armorial bearings, must have arisen from the deposit of the lithic acid. The phosphate of lime, ammoniaco magnesian phosphate, the urate of soda, might either of them produce a similar effect under certain circumstances.

Scalpel.—We are not acquainted with the precise terms; satisfactory information may be had by applying to Sir Charles Scudamore.

Coroner.—We cannot receive his communications even on the same terms as those of Van Butchell or Mr. Copeland.

Theatrical Exhibitions.—In consequence of the commencement of the next session being near at hand, the hospital functionaries will henceforth postpone the performance of every operation, which can possibly admit of delay, until the "lads" arrive from the country. We have ordered our reporters at the different hospitals to watch this contemptible, and no less immoral, measure of certain surgeons.

A Voter in Finsbury.—The North London Lion liberally subscribed five pounds to defray the expenses of the *first* election.

A Constant Reader.—Contributions are readily received from subscribers.

J's communication has been received.

A Young Practitioner.—If the worthy Baronet's opinion be required, it would be satisfactory to get him to *sketch a diagram* of the case. No additional fee is required for the drawing.

Lithotrity.—The hole mode in the fundus of the bladder by the lithotrite, was not so large as to admit the operator's *thumb.*

T., of Newcastle, will find the business he alluded to detailed in the Lancet of 1829–30, vol. ii., pp. 140 and 698. Dr. Knott's conduct on that occasion was no less useful to the student than honourable to himself, and met with the highest approbation of the managers.

Catheterism.—If the urethra be lacerated by the percussor, the introduction of a catheter soon afterwards cannot be so easily accomplished as if no mischief had been done by the percussor. The preparation was carried off instantly after the clinical lecture, by the ingenious operator in a hackney coach, to his *private* residence. We are doubtful if an accurate inspection would be permitted.

The Magnetic exhibits daily at three o'clock.

Scrutator.—Will he favour us with his name and address—incontrovertible proof must be given that the *Professor* alluded to, has a pecuniary interest in recommending pupils of the University College to *another* College.

All communications and works for review to be forwarded, (carriage paid) to Dr. Ryan, 4, Charlotte-street, Bloomsbury-square.

THE

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LECTURES ON DISEASES OF THE SKIN,

Annually delivered in Paris,

By M. Biett,

Reported by MM. Cazenave and Schedel.

ECZEMA.

2d.—Eczema appears, in most cases, in a more acute form, which presents two very distinct degrees.

First degree, (eczema rubrum),—Here the eruption is generally preceded, and always accompanied, by heat and well-marked tension; the skin is inflamed, it presents a bright red tint: if it be closely examined, it is observed to be roughened, as it were, with small projecting points, with a silvery appearance. At a later period real vesicles are distinguished, which, after having acquired their full developement, soon appear under the form and of the size of a small pin's head, transparent, and surrounded with a well-marked inflammatory areola.

From the sixth to the eighth day, sometimes sooner, the redness diminishes, the re-absorbed fluid has disappeared, the vesicles have faded, and the disease terminates by a slight exfoliation, produced by the remains of the vesicles. The eruption, examined at this time, still presents well-marked characters. There is observed a surface of a reddish tint (a tint which still continues some days after the cure), traversed with small rounded points, surrounded with a whitish border, irregularly cut, which indicates the line of demarcation between the elevations of the epidermis which formed the vesicle, and the areola which surrounded its base.

Eczema rubrum does not always terminate so simply; the inflammation, instead of diminishing continues, or even increases in some cases; the vessels having become confluent, break, and allow the contained fluid to escape, which, from having been transparent, usually takes on a milky appearance. This fluid flows over a surface already inflamed, irritates it more, occasions superficial excoriations, whence there oozes a greater or less quantity of serosity. However this serosity diminishes; it thickens, becomes concrete, and forms thin soft plates, oftentimes very broad, which being frequently renewed, leave behind them, when they fall, surfaces more or less inflamed. The serous exhalation ceases by degrees; the scales, now drier, become also more adherent, and fall less frequently. The skin slowly resumes its natural state around the diseased surface, and the cure proceeding the circumference to the centre, the disease terminates in two or three weeks. These symptoms often, instead of improving, continue a much longer time, become at intervals more severe, and the disease, having become chronic, constitutes a very remarkable state, which we shall describe presently.

Second degree.—Whether vesicles of *eczema rubrum* have been observed in the first instance, as generally happens, or the course of inflammation has been so rapid that its products have not presented themselves to us until the disease is in a more advanced degree, it often happens that the eczema assumes a state, bordering at one and the same time, both on vascular and pustular affections *(eczema impetiginodes.)*

In the *eczema impetiginodes* the inflammation is very intense; the skin on the surfaces, which are the seat of the eruption, is, as it were, swollen; the fluid contained in the vesicles has lost its transparence, and has become sero-purulent. These pustular vesicles, crowded together, confluent, and often united, open at an early period; the liquid soon thickens,

becomes concrete, and gives rise, not to plates (*lamelles*) as in *eczema rubrum*, but to yellowish soft scales, formed of laminæ placed over one another, sometimes of considerable size. These scales fall and expose surfaces, from which a reddish serum issues; new ones form, which follow the same course, and thus, until the inflammation at length becoming less, the pustular vesicles are less frequently developed, and in smaller numbers, by little and little the scales again become thinner; on falling they leave behind surfaces less red, and at length the skin thus resumes its natural state. This eruption may last for two or three weeks; it may be confined to a single surface; sometimes it is general, and is, in this case, very severe; it is then accompanied with general symptoms; the pulse is frequent, there is thirst, loss of appetite, &c.

It most generally happens that different degrees of inflammation may be observed in the same individual, especially when the eruption is general, or at least sufficiently extensive. Thus we see the vesicles arise; being at first transparent they are seen to pass into the state of pustular vesicles, and we have observed vesicles of which one half being milky had not yet passed into the purulent state; whilst a yellowish tint, and a greater thickening, indicated this change in the other.

In the cases of *eczema impetiginodes* confined to a single surface, there are frequently observed around the seat of the vesiculo-pustular eruption some vesicles of *eczema rubrum*.

Lastly, *eczema impetiginodes*, instead of terminating in twenty or thirty days, may also pass into the chronic state; but then it does not differ from the chronic eczema which succeeds the *eczema rubrum*, and even at this period it is only *true vesicles* which are developed, the pustular vesicles having become much fewer in number.

The *eczema impetiginodes* is not then an *eczema rubrum*, complicated with pustles of impetigo, but an eruption of which the vesicles, at first transparent, pass not into the state of real pustules, but of pustular vesicles. The disease would otherwise be a real *impetigo*, for at a certain period almost all the vesicles are become pustular, and yet we shall see, when speaking of the diagnosis, that well-marked differences exist between these two eruptions.

The inflammation is sometimes so intense, that the eczema (this happens often enough) may become complicated with some pustules of real impetigo, and with still larger pustules of ecthyma. But these elevations of the endermis contain pus almost from the very moment of their formation; their base is in general larger, the liquid they contain is yellower and thicker.

Acute eczema is scarcely ever accompanied with constitutional symptoms of any severity; sometimes occupying a certain extent, it seems calculated to constitute a very serious disease, and still it follows a regular course, and quickly terminates without having occasioned any other symptoms than a slight elevation of the pulse.

Chronic eczema.—Whatever may have been the primary symptoms with which it appeared, eczema often passes into the chronic state. The skin, necessarily irritated by the presence of the ichorous fluid, and by successive eruptions, far from gradually recovering its natural state becomes very severely inflamed; it is excoriated, cracks are formed, particularly in the vicinity of the joints; lastly, there is a constant and very profuse exhalation of serum; it becomes necessary frequently to change the linen, which soon becomes soiled with this fluid, and on removing it the greatest attention is required, so as not to tear it off and so produce small lacerations, which are sometimes followed by a considerable discharge of blood; they expose red surfaces, of a swollen and softened appearance, on which the impression of them often continues. The eruption may remain during several months without the exhalation of serum diminishing much.

On other occasions, after a certain space of time, the fluid is exhaled in smaller quantity; it thickens and forms plates, and small, thin, soft scales, of a yellowish colour, not adherent, often of considerable extent, leaving beneath them, at the time of their fall, an inflamed surface, a little moistened. These plates are formed more slowly, they are drier, and the disease appears to be on the point of being cured, when, without any known cause, the inflammation assumes a new degree of severity. The surfaces again become very red, they are again covered with vesicles, which soon burst, and the disease pursues the same course. This disease may thus last for years with similar exacerbations more or less severe.

Lastly, in some cases, the least exhalation does not take place, nor even the least oozing; the scales become drier,

less yellow, and more adherent; the skin is cleft and thickened. The scales, which are easily detached, present beneath them a surface which usually is but little inflamed. Sometimes, however, and chiefly in cases of general chronic eczema, the entire skin has remained, even after a space of several months, of a bright red colour, and it is covered here and there with dry and thin scales; it is also cleft, and there is not observed on it any perceptible exhalation of serum. In this case the eczema resembles certain scaly affections, properly so called *(psoriasis)*, so much the more as these scales are no longer produced by the concretion of an exhaled and thickened fluid, but seem to be (as in scaly diseases) plates of altered epidermis. The appearance of the vesicles might throw a light on the true nature of the eruption. M. Biett, has shown, in his lectures, several examples of this *eczema* which became real scaly diseases. The vesicular character became more and more marked, according as they progressed towards a cure.

In some cases, more particularly when the eczema is situated on the legs, there remain but one or two small surfaces, around which the skin, as if attenuated, is smooth, tense, and shining; its surface is covered with whitish scales, extremely thin, and as it were epidermic; no vesicle is observed on these shining surfaces, and the diagnosis might become very difficult if a new eruption, or the exact knowledge of the preceding, and sometimes even the presence of small vesicles dispersed over the circumference, did not sufficiently explain the nature of the disease.

The chronic eczema, at first confined to a small space, may extend over larger surfaces, and in some rare cases, we may see this affection, which occupied at first only the breadth of a five franc piece, gradually extend so as to cover whole limbs.

In all these states the chronic eczema is constantly accompanied with the most severe itching, sometimes harder to be borne than the most intense pain. In vain does the patient arm himself with all his reason and all his courage; he cannot resist the imperative necessity of scratching himself; thus the itching increases, and often returns with severe exacerbations.

This itching is particularly intolerable, and throws the patient into truly pitiable anguish, when the eczema is seated on certain parts; thus when it has its seat on the inner and upper part of the thighs, being often kept up in females by a chronic discharge, it extends to the anus and vulva, and there occasions an itching, which sometimes reaches the vagina, and which cruelly tortures the patient.

After a longer or shorter space of time the itching is mitigated, the serous exhalation gradually lessens; it soon ceases; the scales become drier; the skin is less inflamed. The surface, which is the seat of the eruption, diminishes; the circumference is first cured; the plates become thinner and smaller; they soon cease to be formed; the skin remains a little redder than in the natural state; but this colour soon disappears. Ultimately the disease is often reduced to a very small, red dry surface, covered with extremely thin plates. The surrounding skin is smooth, tense, and unbroken; it resumes its natural state but slowly; the redness, as we have shown, always continues for a certain time after the disappearance of the eruption.

The duration of chronic eczema is almost indefinite; it may continue for months and even for years.

Seat. There is no point of the surface of the skin which may not become the seat of eczema; but there are some parts which it attacks in preference; as those parts covered with hair, where the follicles are more numerous: the pubis, groins, scrotum, axillæ, &c. &c. It may be confined to a single part, to the breast, scrotum, hairy scalp, the ears, and constitutes some local varieties of considerable importance.

Most frequently it attacks several parts at one and the same time: again we have seen it occupy the entire skin at once, both in the acute and chronic form.

Causes.—Eczema is not contagious, but in some very uncommon circumstances it may be transmitted from individual to another, by the contact of two mucous surfaces. Thus, M. Biett has stated in his clinical lectures, several instances of eczema which were transmitted during the act of coition. It often attacks adults; women appear to be more frequently affected with it than men; it often appears in spring and summer. The return of the seasons is in general the period when chronic eczema becomes exacerbated; the same may be said of sudden changes of temperature. It is often developed under the influence of an unknown cause, but it is sometimes the result of a direct appreciable agent; thus it may be occasioned by the action of a strong fire, by the rays of the sun (*Ec.*

solare, Willan); it is frequently observed after the application of a blister, and the eruption may attack the entire arm or the entire thigh.

It is often produced by dry frictions, and especially those made with pommades of a less irritating quality; it is in this way the eczema is produced which goes by the name of *mercurial*. It differs not in the least from the other varieties, either in its symptoms or in its course. In persons who work in refined sugar manufactories attacks of eczema are often developed after burns; lastly, it is frequently produced by excesses, more especially by the abuse of alcoholic potations.

Whatever may be said of the influence of the direct causes on the development of acute eczema, it appears evident to us that it is to a particular predisposition of the system that we must attribute its transition to the chronic state, and its greater or less duration in this state.

Certain local species of this affection are produced and often kept up by causes referrible to the seat which they occupy. Thus profuse chronic leucorrhœa often keeps up an eczema for an indefinite length of time.

The handling of metals, touching powdered substances, as sugar, &c., are a frequent cause of eczema on the hands, &c.

It is one of these varieties which has received the name of the bakers' disease. But this affection is produced sometimes be papulæ, sometimes by vesicles. This is an additional proof of the little dependence to be placed on a classification founded on causes.

Diagnosis.—Eczema, in each of its stages, might be confounded with eruptions of an entirely different character, and its diagnosis is of the highest importance.

Eczema simplex has been frequently taken for the itch, to which, at first sight, it seems to bear a close resemblance: like it, it is developed without inflammation; like it, it generally attacks particular parts, the wrists and the sides of the fingers; like it, it produces intense itching; but the vesicles of eczema are flattened, whilst they are pointed in the itch: those in eczema are always crowded together; they are in general isolated, and entirely distinct in the itch, wherein we often see but one, or two, or three over a considerable extent of surface, between two fingers, for instance, a thing which is never met in eczema. The itching of this latter affection is a kind of smarting very different from the exacerbations of itch: in the former case it is a real pain, while in the latter it is rather an agreeable than a painful sensation; lastly, the itch is essentially contagious, and eczema is not generally so.

Eczema rubrum presents characters by which one might confound it with the miliary eruption; but in the latter the vesicles are never confluent as in the eczema rubrum, where in a very small space a numberless crowd of them may be seen. These are larger in the miliary eruption than in eczema; besides the constitutional symptoms which always accompany the symptomatic miliary eruption, and which are those of an affection more or less severe, are sufficient to distinguish this affection from that now in question. That variety of the miliary eruption which is observed in certain individuals who have taken violent exercise in very hot summer weather, presents considerable resemblance to eczema; but the vesicles are more scattered, there is perspiration more or less profuse, and the disease disappears very rapidly.

Eczema impetiginodes differs from impetigo by very marked characters: the vesicular affection always occupies large surfaces; impetigo on the contrary is most frequently confined to a small surface. The pustules of impetigo never contain a transparent serum at their onset; they present a broader base, and the contained fluid is thicker. The pustular vesicles of the *eczema impetiginodes* are always vesicular at their onset and never contain real pus, but a yellowish serum, a sero-purulent liquid. Again what establishes an additional distinction between these vesicles and the pustules of impetigo, is the difference of the products. In impetigo the pustules constantly give rise to real crusts which are always thick, more or less yellow, rough, and uneven, while the pustular vesicles of eczema never form any thing but thin scales, rather broad than prominent; and further, in this latter affection, we always find around the eruption vesicles of *eczema rubrum*, which are never met in impetigo.

Lastly, the traces which these two affections leave behind, also present very marked characters. Those of impetigo present a brighter redness, and sometimes too this eruption is followed by slight cicatrices, which never takes place in the *eczema impetiginodes*, after which there are only found slight traces of a much less bright red.

It would be easier to confound *eczema*

impetiginodes with the itch, when the vesicles of the latter are accompanied with pustules; but leaving out the pustules, which in nearly all the cases are but a complication, attention should be directed only to the pustules which are always more numerous, and we should apply to them in forming our diagnosis the characters above noticed, to distinguish the itch from *eczema simplex*,

Chronic eczema often presents much greater difficulties in the diagnosis. Among the eruptions with which it might sometimes be confounded, we shall remark lichen which may present two states in which it is very liable to be taken for eczema.

Lichen agrius is also accompanied by an exhalation of serum, followed by the formation of scales; but these scales, smaller in size, thicker and yellower than those of eczema, approximate a little to the nature of crusts; on falling they expose not a red, smooth surface, generally shining and slightly excoriated as in eczema, but a surface as it were fretted with small prominent points (papulæ) generally visible to the eye, and invariably perceptible to the finger, when it is carried over the eruption.

At other times, as in the chronic eczema, lichen may present thin dry scales, without any perceptible quantity of serum, without local inflammation, but then the skin is much thicker and rougher than in eczema, so much so that we often have some difficulty in raising it between the fingers. Again, in lichen we always find here and there close to the eruption some *papulæ* readily recognized by their hardness, by their chronic course, in the same way as eczema almost always presents around the patches *vesicles* easily distinguished from the elements of lichen.

It is chiefly when these varieties, either of lichen, or of eczema, occupy the hands, that very great attention is sometimes necessary to distinguish them.

Certain varieties of chronic eczema resemble *psoriasis* very closely; but in eczema in order to distinguish it we shall have the presence of vesicles around the eruption, or else their consecutive developement; besides, the scales are always thinner, less dry, and less friable, though softer. They are almost always accompanied by an oozing, which does not exist in psoriasis. After their fall the skin does not present, as in *psoriasis*, a smooth, red, elevated surface, but a surface which is marked with clefts and fissures.

However, in certain cases of chronic eczema, very rare no doubt, the eruption may be general, and the skin may present a red tint, at the same time that it is covered with whitish scales of greater or less extent; here the diagnosis is so much the more difficult, when we have not followed up the very first phases of the disease, and when no exhalation exists. We shall distinguish this state from psoriasis by the circumstance of the skin presenting no elevation or hypertrophy, as in this latter disease, and because the fissures observed are proportioned to the muscular movements, and do not cover the surface of the skin in every direction, as in *psoriasis inveterata* But, we repeat it, much attention is required in these cases, and it will sometimes be necessary to wait till a new exacerbation comes to remove all our doubts.

We shall consider the prognosis and treatment at our next meeting.

LECTURES ON SURGERY.

By John Hunter, F.R.S.

Of Suppurative and Ulcerative Inflammation; Granulation, Skinning, Hectic Fever, and Dissolution.

When an inflammation exceeds the adhesive state, and has got beyond the power of resolution, and when the adhesive has set bounds to the suppurative inflammation, the suppurative begins; or in internal surfaces, where the adhesive cannot take place, the suppurative begins. The irritation which is the immediate cause of suppuration is the same, from whatever cause it may have been produced: it is a similar process, going through the same stages, whether it takes its rise from external violence, or from the constitution, or from disposition for disease in a part, if all other circumstances are equal. It is very difficult to give a true and clear idea of the whole chain of causes which lead to suppuration. Irritation simply is not always sufficient; it often only brings on the adhesive inflammation. Violence done to a part is one of the great causes of suppuration, but this alone is not sufficient; it must be with a prevention of union by the first intention, or by adhesive inflammation; it must be attended with death in the part, as in bruises. The application of air to internal surfaces has generally been assigned as a cause of inflam-

mation, when it happened in consequence of destruction of a part; but air has certainly no such effect, for a stimulus would arise from a wound were it even contained in a vacuum; nor does it get to the parts forming circumscribed abscesses, which yet suppurate, in consequence of inflammation, as readily as exposed surfaces. In many cases of emphysema, where the air is diffused over the whole body, we have no such effect, excepting there is produced an exposure of some internal surface for the air to make its escape by, and then the wound inflames. In birds we find the cells in their bones communicating with the lungs, so that they have at all times more or less air in them, although they never inflame; but if these are exposed by a wound, the stimulus of imperfection is given, and inflammation begins, and suppuration may succeed. The same observation is applicable to a wound made in the abdomen of a fowl, for there the wound inflames and unites the intestines, to make the cavity perfect again; but if the union is not allowed to take place, more or less of the abdomen will inflame and suppurate. How should we account also for suppuration taking place in the nose during catarrh, since it is not more exposed to air then than at other times? Air, therefore, is not the cause of suppuration.

We are at a loss to say, with regard to spontaneous inflammation, whether it is a disease in which the constitution will be injured, or whether it is a salutary process in which nature is endeavouring to relieve herself; and it is evident that the same action may arise from different causes.

Suppuration does not depend on the violence of the inflammation; for that circumstance, simply considered, rather tends to produce mortification; and we see that in gout, which does not suppurate, there often is more violent inflammation than in many other cases that do; and in true scrofula we have suppuration without any visible inflammation; so that this does not seem essential to suppuration. Although we find that inflammation and suppuration from injury are very violent, yet that which occurs spontaneously generally exceeds it in violence. In inflammation of the breasts in women, and of the testicles in men, the quicker the inflammation proceeds the better; for where it is slow it gives the idea of specific inflammation, as this generally proceeds slower than simple inflammation.

Suppuration takes place more readily from the surface of canals than in either the cellular or investing membranes; the same degree of inflammation which will produce suppurative in the first-mentioned parts will only produce adhesive in the latter. If a bougie be introduced into the urethra, it may produce suppuration; but if introduced into tunica vaginalis or abdomen, it will only give a disposition for adhesions.

Symptoms of suppurative inflammation.—The sensations arising from a disease generally convey some idea of its nature, Some diseases give what is called a heavy, a dull, or a gnawing pain, &c.; but the suppurative inflammation gives as much as possible the idea of a simple pain, without having relation to any other mode of sensation: this pain is increased at the time of the dilatation of the arteries with the sensation called throbbing. The part now becomes more swelled by the greater dilatation of the vessels and a greater quantity of extravasated fluid being poured out, and a scarlet colour increases from the admission of red globules into vessels not naturally conveying them and the formation of new vessels, and an œdematous appearance, like that in erysipelas takes place. One, two, or three parts of the inflammation lose the power of resolution, and take on exactly the same disposition with that of exposed surfaces, or a surface in contact with an extraneous body. If it is in the cellular membrane that this disposition takes place, or in the investing membrane of circumscribed cavities, the vessels now begin to alter their disposition and mode of action, and continue changing till they bring themselves to that state which fits them to form matter. But as this change does not take place all at once, some parts may for some time continue to discharge coagulable lymph, as in the adhesive state, whilst those parts which have taken on the suppurative action pour out matter; and hence, if tumour be now opened, it will be found to contain both matter and coagulable lymph: in which state it has always been imagined that the matter had not arrived at a state of ripeness by those who supposed its purulence to depend on its confinement and stay. It would appear, from matter forming from the investing membranes of internal cavities and mucous surfaces, that matter may be formed without any breach of surface.

There is a certain period in inflammation when suppuration begins, and which is discovered by new symptoms, as shivering, &c.; and though the change is pretty

quick, time must be allowed for the vessels to be fitted for the suppurative state. The effect of inflammation seems to be the producing the suppurative dispositon, or that state of parts which disposes them to secrete pus: in doing this, inflammation seems to be carried to such a length as to destroy that state of parts on which itself depends; the consequence of which is that they lose the inflammatory and come into that disposition which fits them for throwing out matter. That the suppurative is very different from the adhesive inflammation is plain from this, that if a wound in a suppurative state, yielding good matter, has by irritation of any kind the adhesive inflammation produced in it to any degree, the discharge lessens, and the wound puts on appearances very different from what it had before. It seems a fixed and useful law in the animal œconomy, that when inflammation has gone to the length of destroying the natural functions of parts, so as to prevent their returning by a retrograde motion to that state from which they set out, suppuration should come on to give them a disposition for a second mode of cure.

Treatment of Suppuration.—Suppuration may sometimes be removed by producing actions in other parts; thus, I have seen a bubo cured by a vomit, and similar effects are producible on scrofulous tumours. When suppuration cannot be stopped or resolved, in most cases it is to be hurried on towards the skin, which generally is the first step taken by surgeons. How far suppuration can be increased by medicines or applications I do not know, but attempts are generally made; hence we have I think, in the pharmacopœia, (though I do not read many books,) suppurating cataplasms, maturating, &c., but I doubt if they have considerable effect in this way, for the same applications applied to a sore would hardly increase the discharge of that sore. However, in cases where the parts are indolent, and hardly admit of suppuration, by stimulating the skin more salutary inflammation may be produced, and of course quicker suppuration; but with true suppuration, preceded by inflammation, it is I believe hardly necessary to do anything with respect to the suppuration itself. Nevertheless it has perhaps been found by expreience that these applications tend to bring matter faster to the skin, even in the rapid suppurations; only, however, in those cases where the inner surface of the abscess is within the influence of the skin. This effect, too, may arise from another mode of action being produced than that of quicker suppuration, which is the hastening of an ulceration. Poultices of bread and milk are commonly used to inflamed parts when suppuration is known to have taken place: this application can have no effect, except that of lessening the inflammation, or rather making the skin easy.

Of suppuration without inflammation.—I have hinted that thickening of parts took place sometimes without inflammation, and also that the suppurative inflammation might take place without being preceded by the adhesive. Many indolent tumours, slow swellings of the joints, swellings in the lymphatic glands, tubercles in the lungs, and swellings in many parts of the body, are of the first kind, namely, thickening without visible inflammation; and the contents of some kind of encysted tumours, the matter of many scrofulous suppurations, as in the lymphatic glands, and in the joints of the foot and hand, for instance, and in the hip-joint, called hip cases, of the loins, called lumbar abscess, the suppuration of tubercles in the lungs and in many other parts of the body, all exhibit the formation of matter without any previous visible inflammation. They come on insensibly, the first symptom being a swelling in consequence of the thickening, (which is not the case in inflammation, for there sensation is the first symptom,) and this swelling is increased by the formation of matter.

The nature of the matter is another distinguishing mark between suppuration in consequence of inflammation and that without it, the latter being generally composed of a curdly substance mixed with matter. The curdly matter is, we may suppose, the coagulable lymph deprived of serum, the thinner part is true pus, having the globules and specific properties of pus, and is often as thick as the common pus formed in consequence of inflammation.

All parts which form pus of any kind, whether in consequence of inflammation or otherwise, must go through similar processes to produce the ultimate effect or cure. The first step, in either case, is the evacuation of this matter, for till that is effected nature cannot take means towards a cure; the second step is granulation; the third, cicatrization.

There are three modes of doing the first; one is the absorption of matter, which is very common in the scrofulous kind, but not in those suppurations which

are the consequences of inflammation, and which produces no alteration of the part except the gradually creeping into a sound state; the other modes of discharging this matter are, either opening the abscess, to allow it to pass out, or allowing ulceration to take place on the inside to produce its escape; which process in the present case, having peculiarities different from those arising from inflammation, it is necessary to explain still further.

Ulceration in consequence of suppuration arising from inflammation, is very rapid, especially if the suppuration is very rapid; but ulceration in consequence of suppuration not the effect of inflammation, is extremely slow: it may remain months, or even years, before the parts give way.

When an abscess, in consequence of inflammation, is opened, it immediately proceeds towards a cure, and perhaps may have gone some steps towards a cure before the opening. As inflammation lessens, suppuration becomes still more perfect, granulations begin to form, &c. But when an abscess, not preceded by the common inflammation, is opened, a very different process is first to take place; the consequence is, that inflammation now takes place over the whole cavity of the abscess, which afterwards produces perfect matter, like that produced when inflammation is the original disease. However, it sometimes happens that they inflame before they are opened, in consequence of the matter distending the cavity acting like an extraneous body, not in consequence of the cause of suppuration. I have seen white swellings of the knee inflame before they were opened, when ulceration took place, and the pus was brought soon to the skin, though before it had been for months without producing the least tendency to ulceration, and of course none to inflammation; but the confinement of matter became the cause of inflammation. The inflammation and new suppuration taking place in consequence of an opening into these abscesses, is exactly similar to those inflammations and suppurations which take place in consequence of an opening made into internal cavities; and it is extraordinary that often upon opening these swellings, inflammation, fever, nay, death, shall follow, but if suffered to break of themselves no such effect is produced.

Of Pus.

The immediate effect of the modes of action above described is the formation of matter, commonly termed pus. This matter is very different from what was discharged during the adhesive stage of inflammation, and also very different from the common secretion of internal canals; yet when these surfaces form pus it is probable they are formed by the same vessels: if so, their mode of action must be greatly altered.

In suppuration of the cellular membrane, or of circumscribed cavities, their vessels are but little changed at the commencement of the suppurative disposition, so that they still retain much of they acquired by the first stage. The discharge is, at the beginning, little more than coagulable lymph mixed with some serum; this is scarce different from the discharge in the adhesive stage of the inflammations; but as the inflammatory disposition subsides, a new disposition is every instant altering these vessels to the suppurative state; the discharge is also varying constantly from a species of extravasation to the new-formed matter peculiar to suppuration. The matter removes further and further from the nature of the blood, losing the yellowish or greenish pus, and becoming white, and more viscid and creamy. By the formation of this new substance, the coagulable lymph, which was extravasated in the adhesive state, and adhered to the sides of the cells, either on cut surfaces, as wounds, or on the walls of abscesses, is pushed off, and if there be a cavity, is pushed into it, so that we should find in the cavity both coagulable lymph and pus; or, if on a cut surface, it is thrown off, and is generally removed, along with extravasated blood, &c., with the dressings.

This is the process which takes place in the first formation of pus in an abscess, or from the surface of fresh wounds.

On the internal surface of canals the parts are not obliged to go through all these steps; they run into suppuration almost instantaneously.

THE MEDICAL JURIST.

No. 4.

INSANITY.

Mental diseases are either idiopathic or symptomatic:—the first comprehend all those diseases which are generally spoken of under the term—*Insanity*; while the symptomatic are those which

obviously depend on bodily disease. The nomenclature of these subjects is so vague as to prove the low state of our knowledge respecting them: the great difference between a madman and an idiot is, that the former reasons soundly on false principles, whilst the latter reasons falsely on sound principles—thus there may be much reason displayed in madness, but not in idiotcy. Lord Eldon has endeavoured to make another division, under the appellation of "unsoundness of mind;" but it is very vague. It is only a minor degree of idiotcy.

All insane persons are distinguished from healthy persons, by a want of controul over their feelings and actions. Most authors have said that insanity is a want of perceptions of what is morally right and morally wrong; but it will often be difficult to tell whether insane persons may not have this perception, and in order to exculpate them from blame, this want of perception must be evidently seen in many of their actions, if not in the whole tenor of their conduct. Some attempt to prove the fact of insanity from the very act which has brought the prisoner to trial, but he is not likely to be excused on this ground. I cannot agree, says Dr. Christison, with the Continental Jurists, who say that an act may be so atrocious, as itself to prove the insanity of the person who has committed it, without any bodily disease being present: but when the latter produces insanity, as in the case of epilepsy, hysteritis, or puerperal fever, madness may really exist without any previous symptoms having existed to warn us of it.

It is thought by some that suicide always results from insanity. One man married his mistress in order to legitimize the children he had had by her, and then killed himself. It was endeavoured to prove his insanity by his last act, but there was too much "method" in the previous act—his marriage. A man named Nicholson was executed in 1813, for the murder of Mr. and Mrs. Bonner; he was previously on good terms with them, and seems to have had no motive for the deed, which he declared was from a sudden impression, felt about five minutes before he committed the crime. A corporal determined to get himself hacked to death, in order to atone for his sins, and begged a comrade to chop off his arms and legs: the latter did so, thinking it was no crime to obey the request of his friend—he was beheaded. A man jumped into the water in order to prove to his friend that a man of sound mind might commit suicide. Georget relates the cases of persons going out to murder others, and giving no proof of madness, except their not concealing the deed. This is called monomanic homicide; but the safety of society demands that all such persons should be confined.

In many cases, insanity continues without interruption, but in others there are intervals of health, called "lucid intervals,"—persons subject to them are "lunatics," properly so called, but the term is now used more generally. In lucid intervals persons are capable of performing all the duties of life, and are responsible for their actions. They are less easily cured than those whose madness is uninterrupted.

Insanity may be either partial or universal. The former is called "melancholia" by Cullen and Pinel. It may be expressed by the term "monomania." There is no action, however extravagant, that persons afflicted with it will not attempt. The first delusion we shall mention, as one to which monomaniacs are subject, is as to their own persons—they often fancy themselves kings, queens, emperors and prophets. Some have thought themselves barley-corns, and were afraid of going out of doors for fear of the birds. The second delusion is as to their circumstances, which they generally imagine to be of a melancholy nature. They are often in dread of conspiracies. A third delusion is, as to their future state, which they always paint in gloomy colours. It is sometimes difficult to distinguish this state of feeling from that of many religious persons whose minds are sound. A fourth delusion is, as to their being in ill-health. All the patients affected with these delusions are rational on all other subjects; and sometimes succeed in concealing their particular hallucinations. There was one gentleman who thought that Buonaparte was Jesus Christ; but before his examination came on, his hallucination changed to his being Christ himself, and when attacked on the former delusion, was perfectly rational. It is a question how far the act of a monomaniac can be excused, when it is not immediately connected with the subject of the hallucination. One man had a delusion, which led him to dress himself like a woman. His will was set aside, but the propriety of doing it is very questionable. Another was a man whose understanding was acute on all points, except that he thought himself the owner of the winning

horse in every race. In a case of murder a partial madmen would escape punishment, although the act might not be connected with his hallucination; but he ought to suffer in such a case. As to wills, if not proved to be connected with the hallucination, they should themselves be looked to, in order to decide on their propriety, from their own internal evidence.

We must not conclude that a man is insane from one act; and therefore it is wrong for barristers to make medical men give their opiniou on successive single acts. Madness generally *begins* gradually, but often *terminates* suddenly; as in the case of a gentleman who thought he had a glass leg, but whose servant cured him in a quarrel, by proving that this leg was able to bear the blows of a poker. Another person was speedily cured by finding that what he took for a canvas partition, was a stone wall. Madmen may be either manageable or furious, and a cure, in idiopathic cases, is not so rare as is generally thought. Death seldom occurs from the madness; the patients are often remarkably healthy in other respects; and but slight morbid appearances, in most cases, can be discovered on dissection.

Somnambulism is a state closely resembling that of madmen who acts correctly on false principles. Dr. Christison never knew a case of a person committing a crime while in a state of somnambulism; but Fodere tells us of a priest, who stabbed the bed of a person he disliked; but it is not certain that he was not awake at the time. A woodman, waking up suddenly, killed his wife with an axe. He said he thought the devil was come, that he struck at him, and hit his wife by accident.

Insanity may be pretended from various motives; and in many cases the pretence has been successful. The kind of insanity chosen, is usually general madness of a furious description, or partial madness of a gloomy cast. In suspected cases, we must first trace the history of the case from the time of health to the present date. There is much to be learned from the countenance, but it requires great experience to judge of it; and idiots have sometimes shrewed countenances. The next thing to be observed is the voice, which is of a peculiar kind in real insanity. In the latter, also, you have preternatural strength, violent exertion without perspiration, &c. Pretended madmen generally return incoherent answers to every question; which is not often the case with real madmen. The best way to detect them is to tell them suddenly some news about their case, observing the effect on the pulse. Cases of real insanity are more easily cured while recent, than if neglected. Cures are also more frequent in youth than in age, and in females than than in males. Monomania is oftener cured than other kinds of insanity, although the contrary is maintained by Esquirol. He says idiotcy is never cured, and the fatuity of old age is likewise considered incurable. Sudden cases are more easily cured than gradual ones. Reports of cases of insanity are generally defective in many particulars.

We may be called upon to decide on the insanity of an absent or a dead person. It is seldom that a man can conscientiously give an opinion here; and he must not pronounce on separate acts. There is reason to think that furious fits of mania, may take the place of epileptic fits. Cases of this kind are mentioned by Haslam and Burrows. Insanity is often not so much an *accompaniment* of bodily disease, as a *sequel* of it: one symptom becoming more prominent than the rest, and remaining after they are gone. Sometimes, homever, insanity is one of the attending circumstances of diseases. The deaf and dumb, whose state of deprivation in these particulars is accompanied by a kind of mental disability, are reckoned among the insane, unless they are educated by the modern system; in which case they will be considered as responsible agents.

Bodily disease is often accompanied by a kind of mental imbecility in which men are easily excited, and owing to the former practice of leaving estates to the Roman Catholic Church, there is an old Scotch law against the dispositry of heritable property on a death-bed. It is absurd to keep up this law now. There are many lingering diseases in which the judgment remains sound. The time is now limited to sixty days. If the person lives beyond that time, after making his will, the latter is valid. It is also valid if the person who made it paid his accounts *before* signing it, or afterward; so that fifteen minutes would have made all the difference. Such a distinction must be absurd. A question may also arise, as to whether the man at the time he made his will, was ill of the disease of which he afterwards died. As the statute is so absurd, its conditions ought to be fully proved before it is put in force. It is sometimes alleged

that a man recovered of one fit of his disease, but died of another fit, as in a case of epilepsy, for instance. Suppose that a man, while making his will, labours under paralysis of one side of his body, and that he dies within sixty days. But did he then, at the time of making his will labour under the disease of which he afterwards died? Such a question must be decided on metaphysical grounds.

Sometimes the line between health and insanity is so slender as to require great judgement to discriminate between them. Hall long ago remarked on the difference between total and partial insanity. The great difficulty is with respect to the latter which is now called monomania. Dr Haslam says, no specific direction can be given for pronouncing with certainty on a supposed case of it. Monomaniacs are sometimes very cunning, and they will then avoid giving direct answers. One of the best plans is to allow the patient to detail his case, and the ill-treatment which he alleges he has suffered; and never to interrupt him in his digressions. Want of sleep is a very frequent symptom; and likewise a restless, wandering eye; and if asked the reason of these phenomena, the patient will often ascribe them to the malice of his enemies. Insane persons often fancy they see and hear things which have really no existence. The maniac thinks they are real, but the monomaniac knows they are not. Some persons exhibit in their conduct such peculiarities, as to incur the suspicion of monomania, and yet act so well, that it is dangerous to deprive them of liberty, or free them from responsibility. Lord Cudworth used to indulge in eccentrities of dress, and they tried to set aside his will on the ground of insanity; the case went before the Lord Chancellor, who decided in favour of the will. It was a good rule laid down by Lord Erskine, that if the insanity does not affect the act in question, that act should be considered valid. If the person, however, should labour under any idea, which might lead to mischief, he is a proper subject for restraint. When I went to Liverpool, says Dr. Traill, I found a man in the asylum, who had been confined for ten years for threatening his neighbours; but the only peculiarity which could be discovered in his conduct, was his keeping the seventh day holy instead of the first; as he thought he had no right to change the Sabbath. He was a strict Christian, and attended worship on Sundays in compliment to the rest. Finding he had given up all idea of doing harm, I set him at liberty, and kept sight of him for eight years. He went on quite correctly, still keeping the Jewish Sabbath. He remembered me with gratitude, and as a mark of it, came to me with a hare as a present. Lord Mansfield thought a man was responsible for his acts, if he could tell good from evil; though he might be incapable of managing his affairs. He said that if a man committed a crime, in the intervals of occasional insanity (properly called lunacy), he would be responsible for it. It is not easy to draw the line on the general question. Cases must be decided each on its own merits. The impunity for crime which is attached to insanity, makes a great impression on the mind of all lunatics. In 1800, Margaret Nicholson was acquitted of attempting to murder the king, as it was proved she had a fit of lunacy the day before; and Lord Kenyon thought it highly improbable she could have got well in the short interval.

A late act of parliament has several provisions to prevent the disgraceful abuses, which were proved, by parliamentary investigation, to have existed. All asylums must be licensed; a plan of them must be furnished to the magistrates, who may appoint visitors, from whom it is a misdemeanor to conceal any patient. No patient can be admitted into an asylum without a certificate from two medical men, who must have examinined him at different times, and within seven days prior to admission. A medical man cannot sign this certificate, if he has any interest in a lunatic asylum; or if his father, or son, or brother, or partner should have such an interest.

There is better hope of patients with high maniacal fury, than of monomaniacs, especially if the latter be of a despondent class. The existence of an hereditary taint, renders the case unfavourable; for then slight causes will bring back the attack. In the case of insanity produced by intoxication the first attacks are generally cured easily. If insanity arises from pregnancy, it is generally cured in six weeks, and almost always within a few months. Of cases of insanity from drinking, of long standing, the majority are quite incurable. Monomaniacs require from four to six months, or even two years for their cure, especially if they exhibit a tendency to suicide. If the attack should last longer than this, it is seldom cured. By an examination of the French tables, it appears that the greater number

of cures take place within four months. The greatest misfortune in this disease is the tendency to relapse after recovery: this relapse is common when the disease is hereditary, and where it arises from drink, the habit is but too liable to recur. If it arise from distress of mind, when the patient is left alone, he is apt to ponder on the painful subject. Intoxication is sometimes characterized by the symptoms of delirium, of hysteria, of epilepsy, and of apoplexy. Hypochondriasis, in a severe form, is generally attended by dyspepsia.

A lucid interval is not a mere remission of the disease, but an interval between the paroxysms, in which interval the mind is in a perfect state. The law allows a lunatic to make his will in a lucid interval; but it does not recognize the will of an idiot. Dr. Traill does not think a *perfect* lucid interval exists in insanity. He has known convalescents remain collected for months, if the morbid subject has not been touched upon. While he had charge of the Liverpool Asylum, the burning of York Minster took place; but the incendiary was very properly acquitted on the ground of insanity. The newspapers were admitted into the convalescent ward, and the accounts of the trial caused great sensation. One of the patients told the doctor, that it he were to kill him, he should not be hanged; since either he was mad or his detention in the asylum was unlawful: reasoning, by-the-bye, which was perfectly correct.

A young man was brought into the same asylum one night, with a certificate from a medical man, who had granted it on the representation of his friends, without having seen him personally. He was only intoxicated, and on coming to his senses was much surprised at his situation. In a few days he was dismissed, with an assurace that the life he had lately led would render him a fit object for a permanent residence in the asylum.

Hypochondriasis is apt to degenerate into insanity. Hysteria, if often repeated, tends to produce mental imbecility. As drinking is a volutary act, the law makes a person responsible for the acts committed during intoxication. This was ruled by Lord Eldon, in a case in which the prisonner was quite rational between the fits of intoxication, although the latter were almost constant. Lord Ferriars decoyed a man into his study and shot him. It was proved that he was subject to fits of lunacy, and had had one the day before; but he was executed. It is thought that if he had not been of so high a rank he would not have been executed, but confined. In Pinel's cases of recovery from mania and monomania, only one-sixth relapsed.

Cox's remarks on feigned insanity are very good. Pretended madmen think it is only necessary to be extravagant. They do not copy consistency, or draw logical conclusions from the false premises. They cannot imitate the watchfulness of real insanity, but will generally sleep soundly, if left alone, and if put into a chamber where they can be watched without their knowledge, will generally betray themselves. There is a want of that peculiar expression of the eyes which characterizes insanity; and of that peculiar odour which is very perceptible about the insane, especially after they rise in the morning. The way to detect them is to tell them to relate their own story. They make it far too favourable for themselves, and afford opportunities for contradiction, which would irritate them if really insane. Real maniacs lose hope and fear in the predominance of the morbid idea; but those who feign madness may often be acted upon by them, and are thus detected.

Has insanity increased in Great Britain? It is generally thought that it has; but Dr. Burrows, who treats the subject very ably, shows that although there has been a great increase in the consumption of spirits, and of speculative adventures in business, insanity has really not increased. This opinion is supported by Willis and Heberden. Many insane persons who were formerly allowed to wander about the country are now shut up in asylums, and this swells the apparent number of the insane.

Let us now ta e a glance at the researches of the phrenologists on this subject. They allege that insanity was little understood before their science was introduced, but is much more likely to be properly understood now. Those who feel an interest in the subject, considered in relation to phrenology, will find it ably treated in the best article on the subject, in one of the best practical treatise on medicine, which our time has produced; "Dr. Mackintosh, on Pathology and the practice of Physic." Mr. Combe was taken to the lunatic asylums at Dublin, and told the hallucinations of the patients correctly, from feeling their heads. Every derangement of the brain is a disease; but temporary delirium is not called insanity, because it disappears when the fever

declines, or the bowels are put into order. When any important organ of the body is diseased, the brain must suffer, either from the blood not being properly changed or from what is called *sympathy*—a certain influence conveyed by the nerves. When insanity takes the form of furious violence, the strength of the patient is often very great. The latter may be wrong in everything, or eccentric in one particular only; fancying himself a tea-pot, or that he is made of glass, or having some curious fancy, as for a peculiarly shaped hat or coat. This last kind of insanity, which is called monomania, could not be explained satisfactorily before the introduction of phrenology. Men used to think themselves kings or prime-ministers, while perfectly sane on all other particulars; and it could not be understood how the brain could be wrong in one particular and not in another, till different feelings were assigned to different parts of the brain; any of which parts, of course, may be diseased independently of the rest. I was walking, says Dr. Mackintosh, with a man who had been quite sane up to that time, but who suddenly exclaimed that he was a great man, and he was to marry the Princess Charlotte, and to conquer Buonaparte. He fasted and prayed three days and nights, and thought an angel visited him, and gave as a sign that a plant in the room should die or revive at his wish. I got his bowels opened, and he recovered for that time, but he has since been placed in an asylum. Another gentleman had some large hæmorrhoids excised, and the dischaage from them being suddenly cut off, and as he lived high, he became maniacal, and was caught firing his pistols in his bedroom. When Dr. Mackintosh was informed of this, knowing the conformation of this gentleman's head, and in particular that the organ of caution was largely developed, he told the friends that the gentleman thought himself beset by conspirators, which turned out to be correct.

Females advanced in life sometimes think themselves pregnant by some great person. Dr. Mackintosh knew a married lady who fancied herself with child by George the Fourth, and who stuffed anything she could lay hold of up the vagina, in order, as she said, to prevent the young prince from escaping. This she did for years, and is now in confinement. Some monomaniacs fancy a post is transformed into a king, and make speeches to it, and pay various marks of respect to it accordingly. Some write very cleverly on the false impression that ministers have been peculating, or that a fraud has been committed on some bank. Dr. Mackintosh new an instance in which a real case of the latter was found out by a monomaniac, who at first only guessed at it. Some fall in love, and pester the lady with letters, till the police is called in, which aggravates the disease, and generally consigns the patient to a mad-house. Others become suddenly insane, and run into ruinous speculations, or perhaps murder their friends. Dr. Mackintosh mentions a man now in confinent who murdered two keepers, and who talks of nothing but murdering millions of people. He remembers an old lady on her death-bed who was quite rational, except that she thought that her husband and brother (who had been dead a long while) were in the room with her, accompanied by angels. She spoke to them cheerfully. Many patients talk about suicide, being afraid of some persons coming after them. Some who have been religious all their days are blasphemous in their language when they come to die, and vice versâ. These phenomena are attributed by some to deranged circulation through different parts of the brain. We cannot ascribe them to organic lesion, for the brain is often found unaltered in such cases. Indeed men recover sometimes, after having been insane for years, and the brain is found perfect after all.

While some insane patients are bold and inclined to do mischief, others would shrink into a nut-shell, and often commit suicide to escape from imaginary enemies. Sometimes hatred is felt towards their dearest friends, supposing them to be in a conspiracy to confine them. A gentleman had the small-pox in a violent form: on recovering from it he suddenly became insane, and while Dr. Mackintosh was writing for him, aimed a blow at him with a stick, and threw a chair and other articles at him, though without doing him any mischief. At the great fire which took place at Edinburgh, in 1824, a man acquitted himself so well that he obtained a sum from the town, as a reward for his exertions. He took to drinking, which ended in violent mania. He thought that devils attacked him in the night; tore all his clothes and blankets to pieces, and scratched his body all over. Some physicians predict, from the habits and phrenological development of persons whom they know, that the latter will some day be confined in a mad-house. Some of

the patients become very emaciated and consequently weak, but in the paroxysms of the disease their strength is amazingly increased.

Dr. Mackintosh gives an interesting account of his visit to the Asylum for the Insane at Chatham. Some old musicians played a jumble of parts from all kinds of tunes, taking two or three bars from each. There was an old weaver who was constantly going through the motions appropriate to his trade. Soldiers, though insane, fell into line, and performed their exercise with tolerable correctness. They all thought the rest of the patients were mad, but not themselves. Some thought they saw in the air engagements between ships. One man there was never sure of anything, even in the days of his sanity, he had always doubts. Some were walking about making love-sonnets. Some, who had been medical men, were holding disputations. Many medical men went mad during the Peninsular War, for after a battle, instead of going to sleep, like the other officers, they were obliged to dress wounds, and the anxiety, labour, and want of rest brought on insanity. Many of them committed suicide. One medical man popped a child into water as soon as it was born. He was put into an asylum, and was constantly arguing with a lawyer there.

The desire for women among insane persons, sometimes rises above all other passions; but this is, perhaps, not very common. The inmates of an asylum generally regard each other with dislike; and this prevents their combining, or no keeper would be able to controul them. Many years ago a doctor went into a ward alone, and was locked in, as was then the custom. The pot was on the fire, and the patients proposed to singe the doctor first, and then to make soup of him. He kept them in conversation about different things, and thus kept them at bay till he heard a keeper at the door. He then called out to the latter, or he would have been seriouely injured. Many patients are hypochondriacal. and these should never be laughed at; for either there is organic disease somewhere, or they really feel great distress. You meet with many ladies in this state of mind. They are generally unmarried, and have long been looking for husbands without success. We are sometimes called to patients who will not eat; and to others who pretend they cannot. Dr. Campbell, of Edinburgh, had a patient of this kind, who was very fond of good living; and, though supported bp the charity of friends, indulged in salmon, ducks, and other expensive articles of diet. He was one day called to attend her, and found her feasting on a duck; the whole of which she eat, and drank a bottle of porter, with some wine, complaining all the while that she could not eat! There was a gentleman who fancied himself afflicted with scirrhous-pylorus, and many other diseases, and had blistered himself all over. He said he could not eat; but would take a fancy at midnight, for a boiled chicken, and then for other things, which his cook would have to dress in the night. He would have half a dozen kinds of wine to this supper. He was irritable, that if a cinder fell out of the fire, the noise put him into a rage. Dr. Mackintosh pronounced him insane, which his friends would not believe it; but it was proved by the sequel. One day he thought he had stone in the bladder, and collected fifteen medical men to consult on his case. Dr. Kellie, of Leith, passed a sound into the bladder; found no stone; but, by means of his finger introduced into the rectum, detected enlarged prostate. The gentleman afterwards fancied he had desease of the rectum, and used to preserve the feces passed from the bowels, in eight or ten vessels; stirring and smelling them occasionally, to detect the progress made by the disease. He soon afterwards died, when the stomach was found diseased; the dura mater thickened, and numerous arteries ossified.

REVIEW.

On the Nature and Treatment of Diseases of the Heart, with some new Views on the Physiology of the Circulation. By James Wardrop, M.D. to King George IV., Lecturer on Surgery, &c. &c. 8vo., London, 1837. John Churchill.

It must be obvious from our last notice of this work, that the author has not only followed the footsteps of the illustrious Harvey, but has explained many phenomena of the circulation untouched by that immortal physiologist. The truth of this assertion will appear to all acquainted with the imperishable work on the circulation, after the perusal of the succeeding extracts. Mr. Wardrop writes so graphically and logically, that it is utterly impossible to abridge his language,

and this is our apology for our long quotations from his excellent and original work. Thus we should do him and our readers injustice, unless we inserted his own words in describing what he has aptly termed, the *Musculo-cardiac function*; and we assure our readers that they will gain much instruction and valuable information from an attentive perusal of it.

"*The Musculo-cardiac Function.*—However difficult it may hitherto have been to explain the phenomena of the living bodies, yet, whenever we have gained a step in physiological science, we are struck with the remarkable simplicity in the means which nature employs for accomplishing what had to us appeared a most complicated function in the animal economy. In endeavouring, therefore, to explain any of those phenomena of living beings which have hitherto evaded research, it may be anticipated, that, if such inquiries be successful, they will not lead to the discovery of *new laws*, but unfold the same simplicity of means for performing those operations of the economy, which have already been disclosed by human intellect. It has been indeed justly observed, in allusion to the progress of chemical science, that it has shown 'from what a small store of primitive materials have all that we behold and wonder at been created!' And in like manner we perceive that as physiology has advanced and we have been able to explain any of the phenomena of living animals, the laws which govern them are found to be equally few and simple; so that it is by no means improbable that some such general law as that of *gravitation*, which governs the material world, will be discovered to govern and regulate all the phenomena of organized beings.

"In the arrangements of the animal economy it may be frequently observed that one organ is destined to perform several distinct functions—functions indeed so dissimilar and apparently so unconnected with one another, that it would not be anticipated they could be executed by the same physical apparatus.

"Thus, for example, the muscles of the jaw are not only employed to masticate the food, but they at the same time evacuate the salivary glands and squeeze the saliva into the mouth by the pressure they produce during their contractions on the salivary apparatus. The urinary organs of the male, moreover, are employed for the transmission of the seminal fluid, as well as to afford a passage for the urine. And the bones not only support the body like a framework, but they afford fixed points for the origin and insertion of the various muscles, and also form walls of defence for the internal organs, as the brain and the thoracic and pelvic viscera.

"The functions of the respiratory apparatus are still more multiplied. Besides arterializing the blood, conveying odorous substances through the nasal passages of the organ of smell,—assisting the return of the venous and expelling the systemic blood,—and producing the voice; they also, as I shall subsequently endeavour to demonstrate, are employed in modifying the supply of blood to the heart. In birds we find that the functions of the respiratory apparatus are even more numerous, the air passing into membranous sacts within the chest and abdomen, as well as into their hollow bones, in order to assist their flight.

"In like manner we shall find that the *muscles*, besides being the active organs of motion, destined to perform the various movements of the body, are essential auxiliaries in the circulation of the blood, in the arteries as well as in the veins, performing these offices merely by the pressures which they produce during their contractions on the adjacent vessels.

"A general view of the means by which the circulation of the blood is carried on throughout the animal creation, as well as the phenomena of diseases, points out the errors of those physiologists who have endeavoured to explain the *systemic* circulation by the action of the heart alone. The momentary flushings of the cheek, and the diseased changes in the cutaneous *capillaries* of a common pustule might surely have been deemed sufficient to show that those vessels are endowed with powers and perform functions in the circulation which are independent of the central organ.

"The fact that the circulation of the blood is carried on in some of the lower animals, as in worms and in insects, without a heart, and only by the most incessant motions of their bodies, might have indicated that muscular contractions have at least *some* influence on the circulation of the blood in the arteries as well as in the veins.

"So important indeed is the influence which the muscular movements have on the circulation of the systematic blood, that in various tribes of animals, the heart is found developed more and more perfectly in proportion as the body is less exposed to motion. Whilst, therefore,

the restless *insect* requires no heart to impel its blood, the *shell-fish*, fixed and mot onless on its rock, is provided with a central organ or heart, to carry on the circulation. In man the duty required of the heart must therefore vary with his bodily pursuits, the sedentary habits of some causing this organ to derive little or no assistance from those of locomotion, whilst the active occupation of others will materially aid the circulation of the blood.

"When the respiratory apparatus is healthy, and the circulation through the right heart undisturbed, the pulmonary veins afford a sufficient supply of arterialized blood to the left heart for the ordinary purposes of the systemic circulation. During sleep this must be strictly true, but when the heart is suddenly required to act with unusual vigour, a circumstance which is constantly taking place whilst we are awake, an increased supply of blood then becomes necessary, the energy of the heart depending on the quantity of blood with which it is supplied. This important office we shall find is fulfilled, not only by *accelerating* the flow of the venous blood into the right heart, but, as I shall endeavour to show, also by *impeding* the exit of the arterial blood from the left heart, and both these purposes are admirably effected simply by the change of form which the muscles undergo during their conrtactions.

That the velocity of the circulation in the veins of the extremities is accelerated by the contraction of the muscles of the limbs, and consequently that muscular exertions assist in propelling the venous blood towards the right heart, is a fact long since pointed out and generally admitted by physiologists. It was consi- by Haller, and has never been contradicted by subsequent writers,—as alone sufficient to explain both the increase in the heart's action and the frequency of respiration which follow muscular exertions.

But whilst the pressure caused by muscles during their contraction propels the blood onwards in the contiguous *veins*, it seems never to have been contemplated what must be the effect of that compression on the adjacent *arteries*, although these vessels are doubtless alike exposed to its influence. It will however be shown that the effect of muscular contractions both on arteries adjacent to, as well as on those imbedded in, the substance of muscles, must be to compress these vessels, by which compression the flow of blood through them will be necessarily impeded, —hence, the contraction of muscles will increase the accumulation of blood within the heart in two ways,—by *accelerating* the flow of the venous blood to the right heart, and by *impeding* the transit of the arterial blood from the left heart.

Mr. Hyslop having bled a lady to syncope, became alarmed at its long continuance, and on accidentally raising her from a horizontal position by grasping her arms and supporting by them the weight of the body, she rapidly recovered. Surprised at this, more particularly as the change from the horizontal to the erect posture might have been expected to have had an opposite effect, Mr. H. was led to reflect what could be the cause of so sudden a restoration of the heart's action, and he became convinced that whilst elevating the body and allowing its weight to be supported on that part of the arms along which the brachial arteries pass, he must have compressed those vessels, the effect of which compression was an impediment to the flow of blood through these arteries, and consequently an increase in the quantity of blood in the heart. He thence concluded that the rapid recovery of this patient from syncope was analagous to the artificial process of transfusing blood. Subsequent experiments enabled him to prove the accuracy of his observations. He found that by the application of a tourniquet on the brachial artery he could increase the heart's action about ten pulsations in five minutes; an ingenious mode which he proposed to adopt in cases of syncope or apparent drowning in order to revive the heart.

"This interesting observation, as I shall endeavour to show, leads not only to a satisfactory explanation of some phenomena of the circulation, but in particular it explains how the quantity of *arterial* blood, and, consequently, the vigour of the heart's action, are increased by muscular exertions.

"The effect of muscular contractions in compressing arteries and consequently in impeding the circulation of the blood through them, may be demonstrated by experiment as well as by an examination of various phenomena.

"If the radial artery of a person who is powerfully contracting the muscles of the arm be examined, its pulsations are soon found to become feeble, and, at last, they are scarcely perceptible; whilst the moment the muscles are relaxed the artery is perceived to beat with its natural force. By the same experiment it may also be shown, that the effect of impeding the

transit of the blood in the arteries is to increase the action of the heart, it being found that in proportion as the strength of the pulsations of the radial artery diminishes, so is the impulse of the heart increased.

"Next let us consider the position of arteries in their relation to the muscles and learn the mechanism which enables the muscles, on contracting, to compress the contiguous blood-vessels in such a manner as to *impede* the systemic circulation.

For performing this important function, and which I have denominated the *muculo cardiac function*, we perceive several simple and beautiful contrivances; whilst we also find a striking illustration of this peculiar office of the muscular system in the mechanism which nature has adopted in order to *prevent* the compression of some arteries, when such compression would be injurious to the proper performance of the functions of those organs which such arteries supply. For although it appears that it is not requisite that some organs should be at all times supplied with an equal quantity of blood, there are others wherein any alteration in the supply of blood, would be prejudicial, or even fatal, to the great functions of life; and hence whenever the heart requires an additional quantity of blood, that office is fulfilled by impeding the flow of the arterial blood through the arteries of those organs only which do not at all times require a uniform supply of the sanguineous fluid.

"In accordance with these positions, we find that the arteries of all organs of the first denominations are so placed that they must inevitably be more or less compressed by the contractions of the adjacent muscles; whilst the arteries of the other class of organs are so situated, that they are protected from all pressure from the movements of the muscles contiguous to them.

"For a demonstration of the first of these conditions, we must look at the arteries of the limbs, while those of the brain, heart, stomach, and iris, each exemplify particular contrivances, by means of which the quantity of blood in these organs is not subject to any variations from muscular movements.

"There are, indeed, several points, in the anatomy both of the muscles and of the arteries, which seem to be specially subservient tothe musculo-cardiac function. Arteries accompany the veins where it is intended that *both* these systems of vessels shall be influenced by muscular contractions: yet, long as the period has been that the relative position of the blood-vessels and muscles of the limbs has been pointed out, no rational explanation of the utility of such an arrangement has been given. It is, however, evident, according to the preceding views, that by such a disposition of the two systems of vessels, the velocity of the blood is equally influenced in the veins and in the arteries whenever the adjacent muscles are contracted;—that whilst muscular contractions assist in propelling the blood in the veins forwards to the right heart. the valves preventing its regurgitation, the same pressure impedes the current in the contiguous arteries, and thus diminishes the exit of blood from the left heart.

"Here, then, we have an anatomical fact. affording additional proof of the simplicity and wisdom which nature displays in all her works, employing one organ to perform at the same time more than one function,—veins and arteries accompanying each other in those situations where it is intended that the circulation of the blood, both venous and arterial, shall be influenced by the contractions of muscles; at the same time those vessels which are *not* liable to compression from muscular contractions are not similarly disposed, either with relation to the muscles or to each other;—thus in the internal viscera, such as in the brain, lungs, and liver, the veins do not accompany the arteries.

"Besides this ingenious contrivance to enable the muscles to assist in accelerating the return of the venous blood to the right heart, and to impede the exit of the arterial blood from the left heart, we find that the relative position of the blood-vessels and muscles to one another is such, that whenever muscles are thrown into action they necessarily cause the adjacent blood-vessels to be more or less compressed, the heart, under such circumstances, requiring additional vigour.

"No arrangement could be better adapted for such compression than the course which is allotted to the femoral and brachial arteries, these being in some places completely encircled and embedded in the large muscles of the extremities, so that on every movement of the limbs they must suffer compression, and the current of the systematic blood be therefore more or less impeded.

"Whilst it is interesting to examine Nature's contrivances in order to *impede* the flow of blood through the arteries, when she requires to increase the quantity

of the sanguineous fluid in the heart, it is no less instructive to observe the means which are employed to *prevent* muscles from compressing the arteries and veins of certain organs any interruption in the supply of blood to which would be injurious.

"In those arrangements where such compression from the muscles is to be avoided, we either find circles of *anastamosis* established between different arterial trunks, or the vessels are so placed that they are completely protected all that pressure which would be produced by the contractions of the adjacent muscles.

"Of the first of these provisions we have examples in the coronary arteries of the stomach and lips, and in the circles of anastamosis of the arteries of the iris,—the effect of all which free inosculations is obviously to render any obstruction in the arterial circulation in these organs impossible, a circumstances which would be constantly taking place from their unceasing movements, had not such anastamosis been established.

"The other provision is explified in the heart and in the brain. In order to prevent any interruption to the circulation in the vessels of the heart, there is not only a free anastamosis between both coronary arteries, but also a peculiarity of structure to which I have alluded,—those vessels passing along a tendinous furrow or groove between the auricles and ventricles in such a manner that, during the unceasing contractions and relaxations of these cavities, the circulation of the blood, neither through the veins nor arteries, can be in any way interrupted.

"And again, if we look at the brain, we observe that its vessels are also protected from all muscular compression, independent of having a free anastamosis established between them. The vertebral arteries pass along a bony canal, where they are so protected that the current of the blood in them can never, like that in the carotids, be interrupted by the contractions of the muscles of the neck during the very frequent and varied positions of the head; whilst the anastamosis established between the carotids and vertebral arteries secures a constant supply of blood in all the arterial ramifications within the head.

"The mode of securing that regular supply of blood to the brain, as well as to the substance of the heart, indispensable for the due performances of their functions, is indeed a striking example of the consummate skill and simplicity always evolved whenever we succeed in unfolding Nature's works. The passage of the two vertebral arteries in such a situation as not to be susceptible of compression by the contractions of the cervical muscles enables those vessels under all circumstances to supply the brain with an uninterrupted stream of blood, whilst any irregularities in the supply of blood to the branches of the internal carotid arteries are also amply provided against by the free commuincation of these vessels with the two vertebral arteries by means of the basilar artery,—so that by this simple mechanism the branches of the carotids are as well supplied with blood as those of the vertebral arteries.

"If such a distribution of the arteries of the brain did not exist, and if the vertebral arteries, like the carotids, were constantly exposed to compression from the contractions of the muscles of the neck, and from alterations in the position of the head, or if there were no free communication between the vertebrals and carotids, then the quantity of arterial blood within the head would be exposed to constant variations, and the functions of the brain would be liable to incessant disturbance,—accidents which the mechanism I have now described is, however, ingeniously calculated to avert.

"But an equal and uninterrupted return of the *venous* blood from the head is of no less importance in the due performance of the brain's functions than a regular supply of *arterial* blood; hence the importance of that peculiar structure,—the unyielding parietes of the veins or sinuses, for warding off the effects of that very compression which is provided in some other veins for the purpose of *accelerating* the return of the venous blood.

"The circumstance of the cerebral arteries being distributed and protected in such a manner as always to ensure a regular supply of blood to the brain may, perhaps, along with the peculiar structure of the veins, be considered as the cause of this organ suffering more than most others when the heart is diseased, a circumstance, which I shall subsequently have occasion fully to explain.

"From what has been said, it is evident that, except in a few organs, the supply of blood must be more or less irregular, their varied functions not requiring the same nicety in the regulation of their supply, and when, the heart's action is disturbed, any temporary irregularity in the distribution of the blood to these organs is not therefore injurious. With the

brain, however, it is essentially different; and the mechanism by which the sensorium is provided with a regular supply of blood becomes, as I have already remarked, the very means of rendering it more liable to derangement whenever the function of the heart is disturbed. On such grounds I shall endeavour to account for the unnatural sounds, false images, vertigo, inability to balance the body, and various disturbances in the cerebral functions, which so frequently, nay, almost invariably, accompany diseases of the heart.

"The effects which I have described of the contractions of the muscles of the extremities in compressing the brachial and femoral arteries will suffice to point out what is here requisite to be noticed as regards the influence of the *voluntary* muscles in increasing the vigour of the heart; but we also find that the *involuntary* muscles perform an equally important share in modifying the circulation of the blood.

"I have already shown that the arteries which supply the heart, and likewise those of the stomach, lips, and iris, are each so situated that the circulation in them can never be interrupted by the movements of these organs. Neither are the arteries of the brain nor those of the lungs, subject to pressure from the contractions of the voluntary or the involuntary muscles, the anastamosis and the protection which is afforded to the cerebral arteries warding off the influence of any movements of the neck; and the pulmonary vessels are affected only indirectly by the movements of the parietes of the chest.

"But when we examine the alimentary canal, we there find an illustration of the function performed by the contraction of the *involuntary* muscles on the blood's circulation. The vermicular motions of the stomach and intestines during the process of digestion must doubtless have a very considerable influence on the circulation of the blood, both in the veins and in the arteries of these organs, and hence, during the movements of the alimentary canal, we observe an increase in the impulse of the heart, indicated by an increase in the frequency of the pulse. In this respect, the circulation of the blood in the intestinal canal in part resembles that which exists in *worms*, the almost unceasing movements of these animals being sufficient, as I have before noticedato circulate their blood, unaided by a hetrt.

"In he next place I shall proceed to show, that the Musculo-Cardiac function enables us to explain many important phenomena which are constantly occurring in the living body, and which could never have been explained, until a knowledge of this function of the muscles had been discovered.

"Some muscular movement will be observed to precede every effort which we make to increase the action of particular organs, because, for such a purpose, it is first inquired that the vigour of the heart shall be increased. Hence we find that, unless when the body is in a state of perfect tranquillity, which can scarcely ever happen but during sleep, the circulation of the blood throughout the system is constantly varying, any muscular movement, however slight, increasing the influx of the venous blood, and at the same time impeding the reflux of the arterial blood. Thus in some organs the quantity of blood is diminished, and in others increased, by every motion of the body, those which are called upon to perform particular functions receiving an increase, whilst other organs whose office less urgent, experience a diminution in the supply of the sanguineous fluid.

"It is, indeed, interesting to contemplate the contrivances which are employed in or to fulfil this office in the various organs, and observe the injurious effects which result from deviations in the due execution of this function of the circulating apparatus. No more satisfactory illustration can be indeed given of the office of the muscles in modifying the circulation of the blood, or of the Musculo-Cardiac function, than by glancing over the developement of those phenomena which may be observed in a living being, at the moment of awaking from sleep, and by reviewing the various functions successively as they are evolved.

"The first indication of a person passing from sleep into a state of watchfulness, is *some movement of the body*. He changes the posture in which he has been slumbering; the limbs begin to move, and, almost at the same moment, and just when he is becomiug conscious of existence, the muscles of the extremities are thrown into contraction; he stretches the limbs and yawns, and, finally, the intelectual powers awake!

"These phenomena are so uniform, though they may vary in degree, and so universal throughout the animal creation, that it would be unphilosophical to suppose that they were not a link of some chain, which, however inexplicable, could

not reasonably be supposed to be the result of chance, or the effect of habit.

"All these muscular movements can, indeed, be satisfactorily explained by contemplating the effects on the circulation, which as I have endeavoured to demonstrate, are produced by muscular contractions.

"The almost instantaneous effect of a person stretching the limbs whilst awaking from sleep, is that of rousing the powers of the mind, and this arises from an accumulation of blood in the heart, which such motions necessarily create, and which, by increasing its action, enables it to propel an additional quantity to the head.

"Scarcely has a man awoke, and the brain received this additional quantity of blood, ere the mental powers are resuscitated, and having been refreshed by "balmy sleep," they almost immediately resumed their wonted vigour!

"The powers of the mind having revived, man is now befitted for his varied avocations, in the execution of which the Musculo-Cardiac function continues to perform an important share.

"Observe how the strength and vigour of the body is increased when we require to make any great exertion! In order to produce a temporary increase in the heart's action, I have already remarked that it is requisite to give to that organ an additional stimulus. This is at once effected by throwing into action such muscles as shall, by their newly acquired forms, compress the contiguous arteries, and thus impede the transit of the arterial blood.

"If, by way of illustration, a man be about to make a great exertion, such as running or leaping, he prepares himself, as it were, by first vigorously contracting the muscles of the arms and clenching his hands. For the same reason, when a person is subjected to pain, as that of a surgical operation, he prepares himself to endure it by throwing into action almost all the voluntary muscles, grasping firmly with his hands, and pressing the feet against some resisting body. And when the female, during parturition, is about to make a powerful expulsive effort to assist the uterus in giving birth to the infant, she in like manner, throws into violent and long continued contractions the muscles of the extremities, clenches the jaws, and squeezes with a convulsive effort whatever may be within her reach.

"Muscular exertions are also employed to effect a similar purpose in those who, from diseases in the urinary passages or rectum, have great difficulty in voiding their contents; so that, before endeavouring to accomplish such evacuations, they forcibly contract some of the voluntary muscles,—muscles whose actions are totally unconnected with those which are employed to perform the evacuations.

"No less remarkable is the influence of this function of the muscular system on a person who is recovering from a state of *syncope*. Having passed into a condition where the last spark of life had been apparently extinguished, the first symptoms of recovery from fainting are ushered in by a series of convulsive movements of the voluntary muscles. Long protracted inspirations are succeeded by powerful expirations; the limbs are convulsed, and soon afterwards the intellectual powers are resuscitated.

"The influence of muscular contractions in increasing the vigour of the heart also explains, in a very satisfactory manner, the salutary effects which children derive from their almost constant movements, and the benefits which arise from all kinds of bodily exercise. How a person, when he feels sluggish and inert after mental fatigue, or from want of sufficient bodily excitement, is revived and invigorated by walking; it also accounts for the exhilarating influence of dancing, or driving rapidly in a carriage, and fully explains the "intoxicating effects" which, according to the poet, the Arab experiences while galloping across the boundless desert!

"On the Orator this influence of muscular movements is no less striking. His gestures keep pace with his mental excitement, and the gesticulations become more and more extravagant in proportion as he becomes impassioned; the heart thus acquiring an increase in the quantity of its blood, and, consequently, the brain receiving a proportionate increased supply.

"All these phenomena can be explained now that we comprehend how muscles during their contraction increase the quantity of arterial blood in the heart; and it is only surprising that physiologists, when endeavouring to account for the beneficial influence of various exercises, and having shown that they increase the return of the *venous* blood to the central organ of the circulation, should not have advanced a step further and considered, what must be the effect of muscular contractions on the adjacent *arteries*.

"My attention was directed to some of these phenomena and to the physical ex-

planation of them which I have now given, when attending a patient who had frequent attacks of gout, and who had been sometime before affected with an arthritic inflammation of the pericardium. After that illness he suffered from palpitations of the heart every morning just at the moment when he awoke, but they continued only a few minutes. On enquiring if he was in the habit of yawning and stretching his limbs, he then stated that he always did so whilst in the act of awaking, and that it was immediately afterwards when he felt the palpitation. He further observed, when interrogated on this point, that, if he accidentally awoke during the night and stretched himself, palpitation of the heart always ensued.

"The effect of yawning and stretching the body in disturbing a diseased heart I also observed in a person who had for many years suffered from symptoms of Hypertrophy, and who was recovering from a febrile illness, for the relief of which an antiphlogistic treatment had been pursued, When convalescent, this patient had no uneasy feelings remaining except a pain in his head, which came on every morning immediately after he awoke, but did not continue longer than ten minutes. From the circumstance of this headache occurring only after he awoke, and from his stating that he was in the habit of yawning and forcibly stretching his limbs whilst he was awaking, it appeared to me probable that the increase of blood in the irritable heart caused by those movements, produced the *headache* in the same manner as it had in the former instance caused *palpitation.*

"The influence of the Musculo-Cardiac Function explains how there is such a remarkable difference in the number, as well as in the strength, of the heart's pulsations when the body happens to be in the recumbent or in the erect postures,—a difference particularly striking in all invalids, and which must have led to the advice so commonly urged, of preserving bodily tranquillity in the treatment of diseases. The difference in the pulse is indeed sometimes so considerable in the different positions of the body that it is usually necessary, before being able to for a correct judgment of the state of the circulating system, to examine both the heart and pulse when the patient is in the recumbent as well as when he is in the erect posture.

"If therefore the influence of muscular contraction on the *arterial* circulation be admitted, it not only enables us to give a rational explanation of many phenomena which take place in the healthy state of the body, but it opens a most important field for the researches of pathologists. It explains the hurtful effects of severe bodily exertions in over exciting the heart. It explains also the beneficial influence of bodily tranquillity in all those ailments wherein the circulation is hurried or disturbed. It accounts for the great frequency of some diseases of the heart in two very opposite classes of persons,—in those whose avocations expose them to violent muscular efforts, and in those whose organs of circulation, in consequence of taking little exercise, obtain little or no assistance from the musculo-cardiac function.

"The various involuntary movements which occur in some diseases, such as those during convulsive, epileptic, and hysterical fits,—the permanent muscular contractions in those afflicted with trismus, and the temporary movements in chorea, must all have a greater or less influence on the action of the heart, and can only be explained by a reference to the musculo-cardiac function.

"In like manner we can account for those differences so remarkable in the vascular system of the two sexes. As the circulation of the blood in the female, in consequence of her inactive habits, derives little assistance from muscular contractions, the arteries consequently become more lax and capacious than those in the male; whilst the veins of the male are proportionably much larger than those of the female, the venous circulation being greatly influenced by all those muscular exertions to which men are so much exposed. In proof of these differences in the vascular system of the two sexes, it is only necessary to compare the distended and tortuous veins of an artizan with the delicacy and beauty of the surface of the female.

"Before concluding this part of the subject, I may notice, as a further proof of the effect of muscles compressing arteries during their contractions, an ingenious mechanism in some animals, which is calculated to guard against compression where such pressure would be injurious. In those of the feline tribe, and which use their paws not only for climbing, but for grasping their prey, in order to prevent the pressure which is unavoidably made on the limbs from impeding the flow of blood through the brachial arteries, these

vessels pass through a bony canal formed in the humerus at that part where they would be most liable to compression, and thus the circulation of the blood goes on without interruption, though these animals continue even many hours, firmly grasping their prey. In the lion also a provision is found in the distribution of the arteries of the head so that the muscles of the jaw can be kept for a long time in a state of powerful contraction without the circulation being interrupted.

"For a like purpose a peculiarity is found in the trajet of the aorta in some fishes. After having supplied the abdominal viscera that vessel in the shark passes along a channel formed by the bony processes of the vertebræ, so that the circulation can never be disturbed in the powerfully muscular tail, during any of its movements.

"Here, then, as well as in the brain and heart, is an example of arteries passing along a course by which they are protected from muscular pressure, whilst we have found other vessels so placed that they are subjected to muscular compression in order to fulfil a very important function in the animal œconomy."

Mr. Wardrop next describes the respiratory organs and the "Pulmo-Cardiac Function," as well as all the phenomena connected with the respiratory organs and heart. Here our readers will find much information. The extracts which we have given afford complete evidence of the value of this work. It will greatly add to the justly earned fame of its author as a pathologist and physiologist. It is one of the most valuable productions of modern times.

The London Medical

AND

Surgical Journal.

Saturday, September 30th, 1837.

HINTS TO MEDICAL STUDENTS.

THE METROPOLITAN MEDICAL SCHOOLS.

At this time, when the lads are fast arriving "green and fresh from the country," to use the language of an eloquent contemporary, we cannot better employ the pages of this journal than in offering our young friends a few hints which may serve to guide and protect them against the snares which they will find laid for them in every direction. There is no trade in this metropolis which is carried on with more *spirit* than medical education, and the great competition which exists amongst the different medical schools, whilst it has induced some to bestow more pains and qualify themselves better for the task of teaching, others, and these by far the majority of the teachers, have resorted to a variety of arts and stratagems to extort money from the student, making a number of promises which they neither can or ever intend to perform, and giving a false and deceitful account of advantages which their schools do not possess.

First of all, let us warn the unsuspecting youth of the arts and stratagems which different schools have unblushingly adopted, in order to make it appear to the student that their commodities are to be had at the *cheapest* rate. The Joint Stock Company of Gower Street, are fully justified in claiming the privilege of being foremost in the rank of impostors, for they had the ingenuity in preparing their "bill of fare" of last session, to fix a low price for their hospital, and make up the *deficiency* by so mystifying the other items of their "account current," that it was absolutely the most expensive school in London.

As another illustration of the same system of imposture, we need only pay a visit to their next-door neighbours, the modern Sydenhamian Professors, who, in the hope of seducing some of the "customers" of the Gower Strect Company, have been mean enough to offer, as a bribe, that they would generously deduct that integral part of the North London Hospital fee, which the *liberal* junta of

the University College have had the long-sightedness and consummate wisdom to impose on those students whom they could not induce to attend their lectures, but who merely wished to fee their *cheap* hospital for the purpose of getting their diplomas.

King's College, it is but justice to say, has ever been consistent in the quality of the "goods" which it has offered to the student since its establisnment. Founded on the true principles of Ultra-Toryism, it had great difficulties to contend with, one professor succeeding another in such rapid succession, as to bear unequivocal testimony of the difficulty of their labours; it would be, however, ungerous not to state, that there is no article in their "bill of fare" which bears the character of an imposition; neither is there any article offered at a cheaper price than their brother-tradesmen of the exclusive order, unless the attendance at chapel, which the student may have three times a day, without any additional fee or remuneration.

The Borough Hospitals require great circumspection from the inexperienced student. The name of Sir Astley, once of itself a tower of strength, is still artfully introduced into the "bill of fare" of Guy's Hospital; but the student must not expect to derive a great fund of practical knowledge from the clinical observations of the "Consulting Surgeon," as his visits seldom exceed one or two per annum. The name of the "Surgical Leviathan" is therefore ingeniously introduced into the prospectus of Guy's School, for the purpose of entrapping any of those unfortunate young men who are not aware of the *intimate* union of the worthy baronet with the hospital.

The School of St. Bartholomew's "is not backward in coming forward," in competing with its adversaries in "thimble rig" performances; and the student must take care not be cajoled and *buttered over* by certain teachers in this establishment. As we observed regarding Guy's Hospital, the teachers have inserted in their "bill of fare" the name of a distinguished individual as one of their lecturers, but who merely gives a very few lectures sufficient to prevent the professors, as a body, being guilty of a gross fraud—we allude to Mr. Brande.

The Illuminati of St. George's, having formed themselves into two divisions, have found themselves in so many difficulties, and the school in such jeopardy, as only to have contrived as yet one clap-trap for the lads, green, raw, and fresh from the country. Sir Benjamin having proffered his services to deliver an occasional "Clinical Improvvisatore," upon terms which will receive universal approbation—terms very inadequate to the merits of the orator!

The Westminster School, though last not least, but little merits the vigilance of the youthful student in medicine, for besides contemplating the *lowering* system of the hospital fees to *their own students*, in strict imitation of the praise-worthy and *liberal* conduct of their northern contemporaries in Gower-street, Mr. Guthrie has, with the same laudable spirit, also imitated Sir Benjamin, and promises the "innocent youth" twenty intellectual repasts, suitable to the most fastidious palates, and on the same liberal terms as those of the eminent and distinguished clinical professor of St. George's.

There is one other institution, though insignificant and contemptible in itself, yet ought to be pointed out to the student as one of unusual audacity—we allude to the Charing Cross Hospital School. The undaunted staff of that hospital having again failed to procure a recognition from the Royal College of Surgeons,

now hold out as an inducement to the ignorant and unwary, that those entering their school shall have a *free* admission to their wards of that hospital, the infamous history of which will long be remembered by the profession.

The *reputation* of the Middlesex School is so well established, that we are not aware that they have thought it expedient to have recourse to any of those base resources so prominent in the prospectuses of most of the other schools; and though the "funds" suffered severely the last two sessions, by an unprecedented diminution in the number of "young gentlemen," who "walked their wards," in consequence of the North London Company reducing their fee to "half price;" it is now probable that the "Middlesex sufferers" will this year be, to a certain extent, reimbursed, as the fee they require is almost the same as that which the Gower-street extortioners now crave from those who will not condescend to attend their soporific discourses. Though the student may not have here an opportunity of being a witness to all the quackery of Animal Magnetism and Kreosote, he will have the superior advantage of attending a large and comparatively well-regulated institution, and wherein, with all its imperfections and mal-practices, he will have an opportunity of seeing the practice of several different individuals, from which more useful lessons may be derived than from "experimental inquiries" and sanguinary exhibitions!

In offering these hints to the inexperienced, we are quite aware that a very different version of some of the nefarious practices to which we alluded will be given by an "independent" hireling, and by those who are bound, both by principle and duty, to countenance and support the old and antiquainted system of medical education.

TRIBUTE TO THE MEMORY OF THE LATE DR. UWINS.

The first meeting of the Medical Society of London was held on Monday last, at which the members were chiefly occupied in conversation respecting the late Dr. Uwins, and came to the determination to place on the records of the society the high opinion they entertained of the character and attainments of their late worthy Fellow.

ANNIVERSARY DINNER OF THE BRITISH MEDICAL ASSOCIATION.

It will give much satisfaction to those who, like ourselves, are deeply interested in the rapid progress which has been making in the Association, to see that their Anniversary Dinner is fixed for this day, the 30th instant.

THE WORKING OF THE ANATOMY BILL.

The London Inspector of Anatomy, and his secretaries, have removed his offices from No. 5. Saville-row, to No. 5, Upper Bedford Place, Russell Square. This change has become imperative, from the great mass of students congregating in that district of the metropolis, in consequence of the advantages held out by the North London School of Medicine, Sydenham College, and the Middlesex and North London Hospitals.

EFFICACY OF ERGOTA IN EXCITING UTERINE ACTION AND ARRESTING HÆMORRHAGE—ARREST OF FLOODING BY EXTERNAL COMPRESSION OF THE AORTA.

To the Editors of the Medical and Surgical Journal.

Gentlemen,—Having observed in your Journal of the 16th instant, some remarks on the beneficial effects of Secale Cornutum, or as it is now termed, "*Acinula Clavis*;" also in the *Lancet* of the 9th instant, some observations, attributed to Professor A. T. Thompson, of which the following is a short extract:—"I need not inform you that the ergot is now much used in promoting the actions of the uterus in parturition; and as it has been erroneously supposed to operate in causing uterine action, it has been employed in every period of pregnancy to produce criminal abortion, and has caused poisonous symptoms, in these cases, of the most alarming kind, which, in some instances have terminated fatally. In a case to which I was called, where the object was to expel a blighted fœtus, fever was induced, with flushed face, a rending sensation of the head, and the other symptoms which I have described as characterizing its poisonous influence."

I have to remark that, I have administered, and seen the medicine given, in, I may say, some hundreds of cases, and where it had been retained on the stomach I have always seen its exhibition followed promptly by increased uterine action, and never, in any case, have I observed any unpleasant symptoms result from its administration; indeed, so well known where its beneficial effects, by the nurses and patients themselves, in that part of the country where I had the opportunity of seeing it used, that, when called to a case which happened to be at all tedious, the patient herself used to request "*some medicine out of the little bottle*," to use her own words, and felt disappointed if the request could not be complied with, in consequence of the presence of any indications unfavourable to its administration.

When given in the form of powder, it has been often found inert, owing to the evaporation of its active principle, from being kept perhaps for some considerable time in this state, and thus offering a large surface to the action of the atmosphere, or when administered in the form of powder, from its bulk, being likely to be rejected by the stomach.

I gave it in the form of tincture, after the following formula:—

℞.—Secalis contusi, ℥i.
Aquæ bullientis, lbiss.
Coque ad dimidium, cola et adde.
Tincture lavendulæ compositæ, ℥i.
℥iss. contains nearly a ℥i. of secale.

When called to a case in the country, I generally took with me ℥iss. of the tincture, or decoction, whichever you wish to name it, and if indications favourable to its administration were present, I gave half this quantity in a little warm drink, and the remaining portion in a quarter of an hour's time, if necessary; indeed, I seldom found it requisite to give more than the first dose.

This preparation possesses several advantages over the powder.

1st. Its activity may always be relied upon.

2ndly. It is not so likely to be rejected by vomiting as the powder, for you will find very few stomachs able to bear ℥i. of secale, suspended in ℥vj. of tepid water, the dose administered by your correspondent Mr. Wardleworth.

3dly. The dose of the medicine may be administered in a more concentrated form, and

4thly. It is always ready. The surgeon need not be detained from his patient an instant; whereas, if you use the powder, which should be prepared only when wanted, it takes some considerable time to pulverize it finely, or if you prefer the decoctions commonly in use, you must have recourse to the dignified process of cooking and messing the affair in a saucepan borrowed from the kitchen, and, in many cases, particularly in the humbler walks of life, under the eyes of your patient.

I extract from my note book and send you one or two cases, in which it had been useful in arresting or preventing *after hæmorrhage*.

Yours, obediently,
W. Rose.

I was summoned to attend Mrs. B., of Stone-street, Maidstone, on the evening of the 10th of August, 1834, in labour of her fifth child; the pains were strong, propulsive, and frequent; the os uteri fully dilated, and the presentation natural; the membranes soon ruptured, and in about twenty minutes after arrival she

was delivered of a healthy male infant. Having detached the infant, and applied a roller tightly round the abdomen, I passed my hand over the hypogastrium, and found the uterus contracted firmly; the placenta was then removed from the vagina.

Immediately after I observed her face become completely blanched, she threw her arms violently about, and seemed gasping for breath; blood was gushing from her in torrents. I instantly made firm pressure on the abdominal aorta* against the lumbar vertebræ, with my left hand, and succeeded in arresting the hæmorrhage. I then had recourse to the other means usually adopted in these cases, viz., throwing open the doors and windows, the application of cold waters to the parts, and exercised pressure on the uterus with the right hand. This organ was now quite relaxed, and felt almost as large as before the birth of the child; the pulse was scarcely perceptible at the wrist. My efforts failing in re-establishing the contraction of the uterus, the usual dose of the tincture of secale was administered in a little hot brandy and water; the pulse being still scarcely perceptible, more than half a pint of pure brandy was given, in small and frequently repeated doses; in about a quarter of an hour she had a second dose of secale, and after the lapse of a few minutes the uterus was again firmly contracted. I was only now able to remove my pressure from the aorta. She was not able to leave her bed for a fortnight, and recovered slowly.

She afterwards informed me that all her previous labours were attended with hæmorrhage, in one or two instances to a very alarming extent, and that her life was saved with much difficulty.

The idea occurred to me that, if I should be called upon to attend this woman in any future confinement, taking into consideration the regular recurrence of hæmorrhage, a dose of secale administered before the completion of the second stage of labour (even though the action of the uterus should still be as powerful as in the present labour) would be likely to succeed in preventing hæmorrhage altogether, which was always to her a source of very great alarm, so much so, that whenever she found herself *enceinte*, from that time to her delivery she indulged a good deal in melancholy forebodings.

She was so much terrified by these repeated attacks, that she vowed "*never more to have a child;*" however, by some *unaccountable accident or other*, "this her vestal vow took wing," and she again became pregnant during my absence in India. She was attended by my friend Mr. Sedgwick, of Maidstone, one of the most experienced obstetricians in that part of the country, who has since informed me that, approving of the suggestion alluded to above, he had given her a dose of the tincture of secale immediately before the birth of the child, although the pains were strong and frequent. She was safely delivered of a healthy female infant, the placenta was thrown off immediately after, and the uterus contracted firmly and permanently. She did not lose a table-spoonful of blood, much to her surprise and satisfaction. She was out of bed in a few days, and able to resume her usual domestic occupations, without the occurrence of a single unpleasant symptom.

SECOND CASE.

On the 20th of July, 1834, I was called upon to attend Mrs. B. of the West Borough, Maidstone, a strong healthy woman, mother of several children. On examination the os uteri was fully dilated,

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* This, I am convinced, is the speediest and most effectual method of arresting uterine hemorrhage. The abdominal aorta can be compressed against the last lumbar vertebræ with great ease and facility, by the left hand of the obstetrician, leaving his right hand free to make pressure over the region of the uterus, or to adopt any other sort of manipulation he may think proper.

Making pressure on the aorta is attended with several advantages:—

1st. It speedily arrests the hæmorrhage.

2nd. It gives time to induce the contraction of the uterus, either by the administration of secale, or any other means you choose to adopt.

3rd. It is very often effectual in arresting, or altogether preventing, those frightful fainting fits, generally attendant on hæmorrhage, by confining the blood within a narrower circle, and having it sent to the sensorium in greater quantity; and

4th. Pressure can be made effectually here, even by the merest tyro, in consequence of the great relaxation of the abdominal muscles and integuments.

This pressure may be adopted in syncope, arising from any cause, either in the male or female subject, with great advantage.

the presentation natural, and the pains propulsive. She had been in labour for three hours; in about twenty minutes after my arrival she was delivered of a full-sized male infant. On passing my hand over the abdomen it appeared nearly as large as before delivery, and on examining per vaginam, I found the uterus containing another infant; presentation natural; uterine action trifling. I ruptured the membranes; this rendered the uterine contractions somewhat stronger; in about fifteen minutes after I perceived blood streaming from the vagina, which I attributed to the partial detachment of the placenta belonging to the first child; a dose of secale was instantly administered; in a few moments strong uterine contractions succeeded; the second infant was born; both placentæ thrown off together, and the uterus contracted firmly and permanently without further loss of blood.

The administration of the ergot was, in my opinion, the best course which could be adopted in this case; for the introduction of the hand into the uterus, the seizing and bringing down the feet, was impracticable, owing to the contractions of the viscus, without having recourse to an unwarrantable degree of violence; and although the discharge of blood was not very alarming, yet I fancy any hesitation in giving the medicine would be injudicious and culpable.

[We fully agree with Mr. Rose as to the judicious plan he pursued in both cases, and are very much surprised how any obstetrician can doubt the efficacy of the ergota. It is very much to be regretted that a public lecturer should deny the power of a medicine, which is well established by the observation of all practical obstetricians, as that of opium or any other well known remedy. The experienced obstetric practitioners will however agree with us, that the ergota, when good, does excite uterine action, relieves the woman from tedious and useless suffering, expedites parturition, arrests hæmorrhage, and saves a vast deal of time and loss of rest, both to the medical attendant and his patient. The proposal of Mr. Rose, to compress the abdominal aorta, in the cases mentioned, is, in our opinion, truly scientific and valuable, and entitles him to much credit for its recommendation.—Eds.]

HINTS FOR THE PHYSICAL MANAGEMENT OF INFANTS.

The new-born infant, while it is being washed and dressed, may have some butter and sugar, though this food is by no means necessary, and it may be applied to the breast, when there is milk, in half an hour or an hour after delivery, or, so soon as the mother has recovered from the fatigues of parturition.

The infant ought to be applied to the breast every two hours, or as often as it awakes from sleep.

Lactation or suckling generally prevents sore breasts and nipples.

A wet nurse ought to avoid spiced, salted, smoked, and oily animal substances, and also crude vegetables, pickles, unripe fruit, and spirituous or vinous liquors, unless when delicate.

Light broths, milk, whey, coffee, home-brewed ale, or porter, are the best drinks, and a pint or a pint and a half of the two last is sufficient during twenty-four hours.

Tea and coffee may be used moderately.

A wet nurse ought to attend most closely to the infant committed to her care, and avoid all crowded assemblies, balls, theatres, &c.

A hired wet nurse ought to be healthful, good-tempered, careful, fond of children, watchful at night, patient, sprightly, cheerful, active, have a good supply of milk, and a healthful infant of her own.

She ought to be treated most kindly by parents who entrust their infant to her care.

The best substitute for human milk is, that of the ass or cow, with a sixth part of tepid water, and some loaf sugar. Three table-spoonsful are sufficient for each repast for a new-born infant.

The milk should not be boiled, or repeatedly heated.

The inferior animals of the mammiferæ are nourished with milk only.

The infant ought to be kept warm, clean, and changed whenever it wets or soils itself, and in such cases dried or washed, and powdered, and a clean napkin applied.

John Hunter well observed, "give children plenty of milk, plenty of sleep, and plenty of flannel."

Farinaceous aliments ought to be used sparingly at first, and mixed with milk. They are most appropriate before the time of weaning.

Ablactation or weaning may be accomplished when the infant is vigorous, after

the appearance of the milk teeth, which varies from the sixth to the twelfth month.

Weaning ought not to be attempted when the infant is delicate, teething, or labouring under any severe disease, as the breast is the best sedative for infants, even if the milk is deteriorated. It ought not to be commenced during winter.

Weaning should be commenced gradually, and not suddenly, the infant being first accustomed to ordinary food; for in the last case, it becomes fretful, peevish, and rapidly out of health.

Children have their likes and dislikes as well as adults, and ought not to be compelled to use any food which they disrelish. Light puddings, eggs, fresh fish, gravies, soups, or broths mixed with arrow-root, mealy potato, bread-crumb; ripe fruits, such as apples, pears, oranges, strawberries, grapes, &c., the pips or seeds being removed, may be used in moderation by infants from the second to the fifth year.

Boiled or roasted meats are best for children; fried, broiled, stewed, or minced, are less proper.

The drink ought to consist of milk, milk and water, barley or common water, tea, coffee, toast and water, a small quantity of ale or porter, as half a wine-glassful; a tea-spoonful of sherry diluted with water, when the infant is delicate.

Solid animal food is improper for young children, as they do not sufficiently masticate it, and it produces irritation in the stomach and bowels. Too much food is generally given to infants, but they ought to be left to their own discretion or inclination.

The infant ought to be allowed to sleep and wake whenever it pleases. All violent rocking is injurious to the brain and to the general health.

It should be kept warm, and so placed that it cannot slip or fall out of bed.

It ought to be placed on the right side in bed, to facilitate the passage of the milk or food from the stomach into the bowels. It may also be turned on the left side, and of all positions, the back or face is the worst.

The clothing should always be suited to the season, and cold avoided. Exposure to cold and improper food, are the most prolific causes of diseases of infants.

It is computed that half mankind perish from cold before the end of the third year.

Air and exercise in the nurse's arms, or in a carriage, or on foot, are as necessary for children as for adults.

An infant is exercised by being carried in the arms, rocked in a cot or cradle, by rubbing its body or limbs at the time of dressing or stripping, by dandling, by its laughing and crying, by riding in a carriage, by crawling, walking, jumping, running, dancing, &c.

The infant finally acquires power to assume the erect position, to stand alone, walk along chairs, &c., when it ought to be carefully watched and assisted.

It ought to be placed on the carpet, with its toys about it, when it will move about to collect them.

It is now exposed to falls and injuries, which often destroy its life.

All soothing syrups ought to be prescribed by medical practitioners only, unless when these cannot be procured.

Cleanliness and bathing are essential to infants. Frequent washing with tepid water, either locally or generally, is highly beneficial. This is beneficial at all times, and indispensable in cold weather.

Cold bathing is now universally condemned for delicate or feeble children.

Exposure to the air is necessary, but hardening, as it is popularly termed, is most injurious, and often induces fatal inflammations of the respiratory organs. The clothing should *always* prevent the bad effects of the weather.

Dentition or teething is a natural process, and unaccompanied by pain when the infant is in perfect health, and properly managed as regards diet, clothing, cleanliness, sleep, air, exercise, &c.

But it is in general a painful process, as few infants are properly managed, or in good heath.

Incision of the gum over a projecting tooth is highly beneficial. Other diseases, which are sympathetically excited by teething, as cough, diarrhœa, &c., are to be treated on ordinary principles.

Every healthful infant ought to be vaccinated after the sixth week, to prevent the danger and mutilations caused by small-pox, and too often death itself.

Children ought to be treated with kindness, and all corporal chastisement avoided until reason is developed. "Spare the rod and spoil the child," is now an obsolete maxim. Moral management is universally preferred by all enlightened individuals.

Severity towards children is cruel and most injudicious. When correction is necessary it should be inflicted with regret and gentleness, and never with a display of anger.

A feeling of jealousy ought never be

allowed to exist between children, there should be no marked preference.

The infantile constitution is frail, and easily injured by external agents, and hence the frequency of diseases.

The diagnosis of the complaints is difficult, as the sufferer cannot, in some cases, give any, and, in others, a proper account of the symptoms.

Literary education ought not to be commenced until the age of six or seven years; but the nature and uses of external objects should be always explained to children.

Infant schools are very superior to the old-fashioned establishments, as they combine exercise, amusement, and competition with instruction.

Much knowledge may be communicated by the representations of pictures or figures of birds, beasts, fishes, insects, herbs, trees, fruits, and mechanical inventions.

The utmost regard for truth, and abhorrence for falsehood, should be always inculcated.

An open and candid disposition ought to be applauded, and an acknowledged fault rebuked with mildness, and then forgiven.

All questions put by children ought to be clearly answered, and the nature of surrounding objects explained to them.

An affable, modest, and polite behaviour should be cultivated and applauded.

The memory and intelligence must not be too much excited, as disease of the brain and bad health may be rapidly induced.

Children who are prodigies in learning, music, and other pursuits, are generally destroyed by premature disease of the brain, water in the head, and many other complaints.

They should be taught to maintain a lively and cheerful countenance.

Attention should be paid to a correct articulation and pronunciation.

They ought to be constantly cautioned against hurting themselves with surrounding objects, and the danger, pain, and bad consequences explained to them.

The greatest judgment is required in treating the diseases of children, and medical aid ought to be procured whenever it can be obtained.

The science and practice of infantile medicine, require deep study and extensive observation.

Large volumes have been written on the subject, and a long course of lectures is necessary to comprehend it.

The delicacy, peculiarity, and sensibility of constitution, the predisposition to a vast number of diseases, the want of speech and of reason, the difficulty of detecting disease and fixing appropriate doses of medicine, render the study and knowledge of infantine medicine much more difficult than is generally imagined.

MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, AT LIVERPOOL.

WEDNESDAY, Sep. 13th.

MEDICAL SCIENCE.

Dr. Roget took the chair at eleven o'clock.

Dr. Mackintosh, of Edinburgh, then proceeded to give demonstrations and exhibit morbid preparations of *dysmenorrhœa*. He had peculiar pleasure in addressing the section. He should introduce a subject which was a great sourse of business to medical men generally, and to accoucheurs particularly. He had himself given up the practice, but still attended much to the subject. It was very interesting to watch progress in discovery. He believed that no man ever made a discovery in midwifery, without his mind was continually working on the point. He was following a course of observations and investigations on the *mucous membrane* of the bowels, when a friend of his went to India. His friend returned in two years, and found him still in the same stage of observations; he had been so much engaged in other things, that he had made no progress in discovery. Soon after, a friend of his came into the museum, and presented him with a preparation, saying, there is a *uterus* without a mouth for you. He examined the *uterus* at the mouth, and found a slight opening, and on squeezing it, there was a slight *mucous* discharge. It immediately occurred to his mind, could this be a case of *dysmenorrhœa?* Science had now progressed to that stage that they demanded facts; he had plenty of facts to bring before them. He began from that moment the investigation of the subject, and he had now collected a vast number of preparations in illustrations of the subject. But he had his difficulties. He had supported a dispensary which gave advice gratis to about 5000 people annu-

ally; and amongst his patients he had found a sufficient number of cases where young patients were pining away from diseased action of the *fluxus menstrualis*. And in the course of a few years, he had seen the strongest constitutions broken down. Hitherto the practice had been only, if possible, to alleviate the sufferings of the patient. When a young man, he had kept what he called a *black book*, in which he marked down all cases which he could not understand, in order that he might at some future time investigate them. He would strongly advise all young practitioners to avoid making an examination, until it was absolutely sought for by the patient. They would remember the case in this very town, where an amiable man had been persecuted, and absolutely destroyed, for making what in his (Dr. Mackintosh's) conscience, he believed to be an absolutely necessary examination. (Expressions of indignation and applause.) He then proceeded to exhibit a number of preparations, showing stricture in the *os uteri*, causing disease in the *catamenia*. Some of the specimens exhibited a false membrane absolutely formed over the *cervix* of the *uterus*. In one specimen complete obliteration of the *os uteri* had taken place, and a deposition of *mucous* matter had accumulated in the *uterus*. It appeared that Dr. Mackintosh had been highly successful in his mode of treatment, to overcome the stricture. He exhibited a Portuguese instrument, an ivory tube and piston, by means of which, leeches had been applied to the cervix of the *os uteri*, and which had been of great service in some cases.

Some discussion followed this communication, in which Dr. Granville, Dr. Copland, Dr. Holland, and Dr. Yelloly, took part.

Experiments on the Connexion between Nerves and Muscles. By Dr. W. Harris Madden. Communicated by Dr. Alison.

The author begins by observing that this subject has engaged the attention of physiologists to a considerable extent, but that the result of their investigations has been unsatisfactory. Drs. Whytt and Henry advocated the idea that irritability was dependent upon some influence derived from the nervous system, supported by the fact, tnat after death by narcotic poisons (which are allowed by all to exert their greatest influence upon the nervous system), the muscles very speedily lose their contractile power. It is affirmed by Smith, on whose observations Cullen founded his singular hypothesis concerning the identity of the muscular and nervous fibres, that sedatives applied exclusively to a nerve destroy the irritability of the muscles to which it is distributed. And, lastly, Whytt endeavoured to show, from his experiments, that irritation of the nerves, or spinal cord, is effectual in exciting contractions, when all direct stimulation of the muscles themselves has ceased to produce any change. With a view of testing the accuracy of this opinion, he performed ten experiments upon frogs with narcotics, from which he has drawn the conclusion, that the results described by Whytt are by no means uniform; that narcotics do not, in all cases, produce any appreciable effect upon the contractile organs; that sedatives applied to nerves exclusively are absolutely inert; and that muscles exhibit distinct signs of irritability long after the nerves have lost their power of exciting them. Hence he concludes that great doubt exists with regard to the inferences which have been previously drawn, and that his experiments add strength to the doctrine of independent irritability.

A few of the experiments may be detailed:—

Experiment 1.—A frog was killed by injecting tinct. opii into its stomach and intestines. All the muscles of the body and limbs contracted vigorously upon application of the galvanic wires. One of the legs was then amputated, the sciatic nerves carefully separated from all contiguous structures, and immersed in the tincture. Six hours afterwards the muscles of the trunk and attached leg perfectly retained their contractility. The muscles of the leg whose nerve had been immersed in the opiate contracted violently when the galvanic stimulus was applied, either directly to the muscular fibres, or to the nerve and muscles, but no effect was produced when the nerve *alone* was irritated.

Experiment 3.—At fifteen minutes before ten, A.M., I introduced two drops of the essential oil of bitter almonds into the mouth of a frog; it was apparently dead in ten minutes. At twelve minutes past ten, A.M., the heart was still pulsating. At four, P.M. the heart was insensible to mechanical stimuli. At eleven, P.M., the contractility of all the muscles was quite destroyed, even galvanism being ineffectual in exciting their action. The result of this experiment, so totally at variance with all that I had previously observed,

indeed with the published observations of the majority of experimenters, astonished me not a little; and I accordingly determined upon its repetition.

Experiment 4.—At five minutes before ten, A.M., I introduced two drops of the same oil into a very large frog's mouth. In four minutes it became evidently much affected; the eyes were soon insensible; convulsive action of the abdominal muscles ensued, and at five minutes after ten it was apparently dead. The chest was opened, and the heart found acting vigorously, but much distended. 12h. 20m., muscles still pulsating; ventricle inactive. Three P.M., heart quite insensible to galvanism, but voluntary muscles readily excitable. 6h. 30m. P.M., muscles still retain their irritability. At ten next morning the muscles were still quite irritable upon direct galvanic action of their fibres, but could not be excited through their nerves. In order to make this experiment more conclusive by comparison, another frog was killed at the same time, by destroying its brain and spinal cord. After several hours the muscles contracted upon direct irritation, but not when the nerves alone were stimulated

These experiments appear to the author to throw doubts upon the confident assertions of neurologists, that the irritability of voluntary muscles is destroyed by the remote action of powerful narcotics and sedatives.

(Concluded in our next.)

ANIMAL MAGNETISM IN LONDON IN 1837.

[The following admirable account of Animal Magnetism, which we have extracted from our able contemporary Blackwood's Magazine, will be perused with all that interest which the subject demands.—Eds.]

Our readers are, perhaps, aware that the Mesmerian controversy, after an interval of nearly forty years, has revived again with the greatest bitterness in France. A great change, certainly for the better, has taken place in the philosophy of animal magnetism. Instead of being brought forward as something altogether supernatural, and setting all reasoning and experience at defiance, it now comes before us as a science founded upon natural laws; gathering round it new proofs the more closely it is examined, and substantiating its claim to be the greatest blessing ever vouchsafed to mankind. In Paris the advocates of the doctrine were so numerous and so distinguished in their profession, that it was impossible to pass over its claims in silence. Men of science and literature—surgeons and physicians of the highest eminence—declared that animal magnetism was not the dream of a madman, as it had formerly been considered, nor the trick of an impostor. They professed a belief in its virtues, and introduced it into their practice. On this the medical section of the French Royal Academy of Sciences thought it necessary to interfere, and appointed a committee, under the presidency of Bourdois de la Motte, to make enquiries on the subject, and report to them the result of their labours. This duty was entrusted to men of the most unprejudiced opinions—some of them had given a cursory attention to the claims advanced by the magnetizers, and considered them unfounded;—others had been impressed with two great a contempt for any thing so wild and startling, on its first announcement, to consider it seriously at all,—and not one member of the committee had compromised himself by having written or spoken one syllable in support of the new doctrine. Another thing which weighed with them, and with most of the thinking men in Europe, was the decided reports *against* the system of Mesmer delivered to the Academy of Sciences and the Society of Physicians in the year 1784. From their decisons there appeared to be no appeal, or at least, most people considered themselves justified in making no farther iuquiry after the researches of such men as Benjamin Franklin, Le Roi, Bailly, De Bori, and Lavoisier. Many circumstances, however, were advanced in explanation of this verdict. Some of the committee are alleged to have been unwell, and not to have attended the meetings; and all were prejudiced, from the beginning, against the introducer of the novel system. Mesmer undoubtedly gave great ground for his suspicions. His accessaries—such as darkened rooms and hidden music—looked more like the aids of a travelling conjuror than the accompaniments of a true science; and the boldness with which his discoveries were promulgated, as also the pecuniary success with which they were rewarded, armed against him the pride and the personal interests of the professional gentlemen by whom he was to be judged. The committee of 1831

resolved to keep themselves as much as possible unbiassed by the assertions of the contending parties, and to examine into the subject for themselves The result of their labours, long and and patiently pursued, and of their experiments, to which it seems impossible for any deception to have had access, is a report confirming the claims of animal magnetism in the most ample manner. This report is ably drawn up, and is probably in the hands of a great many of our readers, as it has been translated, upwards of three years ago, by Mr. J. C. Colquhoun.

We do not propose to take any farther notice of that work, as it will be perceived it has been frequently alluded to in the English report, which we are happy to have been able to obtain. This report was not intended for publication—and we are indebted to the kindness of the President of the scientific section of the Association for the original paper as read at the general meeting. We owe the members of the committee an apology for venturing to print an account of their proceedings without their direct sanction, but we know they will pardon the liberty we allow ourselves in consideration of the interests of science. Mr. Brown, their eloquent and ingenious secretary, will also, we are persuaded, accord us his forgiveness for using his very talented report. It is not often that a philosopher, who has the genius to conduct a scientific examination has at the same time the power of describing it so well.

The Metropolitan Joint Stock Medical, Scientific, and Literary Association has not been long established. But we may venture to observe, that no body of men have done more for the furtherance of the ends for which they are associated than the eminent individuals who compose this society. We will not particularize any names, nor institute a comparison between their labours and those of the chartered body of physicians, or of any other institution- We merely wish to accord our high opinion of the usefulness of the Metropolitan Association as a school of philosophical enquiry, and as an uncompromising advocate of the truth. Where societies of longer standing, and reposing on the respect of the public and the strength of their own characters, have abstained, perhaps too guardedly, from interfering with the new discoveries in medicine or science, the Metropolitan Association has eagerly rushed forward, and hailed with generous warmth the appearance of any novelty. Its honorary diplomas to Dr. Morison, the discoverer of the properties of the vegetable pill, and to Dr. Turnbull, for his profound treatises on the virtues of Veratria, attests its readiness to pay honour to disinterested skill, wherever it may be found. Its medal to the philosophical gentleman who hhs established his reputation by an essay, containing proofs of the unity of the body, shows no less zeal in rewarding metaphysical distinction, than its former proceedings had displayed for the encouragement of medicel utility.

(To be continued in our next.)

TO CORRESPONDENTS.

S. H.—The serious impositions to which an editor is exposed, we alluded to in a late number.

A Constant Reader will always find one of us at the office every morning.

Jurist.—If a person is supposed to be murdered by the hands of an assassin, or by mal-treatment, the coroner is bound to hold an inquest.

Justitia.—We believe Mr. Lawrence was a supporter of the bye law.

Craniologist.—The hat shop recommended by Sir Benjamin is in Vigo-lane.

Churchwarden.—The Inspector is only allowed *one* clerk.

A King's College Student.—An introduction from Professor R. B. Todd to his friend Mr. Lane, medical agent, Adelphi, would prove quite satisfactory.

Calculator.—It was one hundred guineas Sir Astley subscribed for the Duke of Wellington's monument, a sum considerably less than the wotthy baronet had received for fees at Apsley-house.

St. George's Student.—Mr. Walker will deliver the whole course. The services of all others are dispensed with.

A Young Operator.—In performing amputations *without* a tourniquet, the loss of blood is sometimes so considerable as to endanger the result.

Molares.—We only know of two in the mill at present. The Council expect several others individuals to come forward.

All communications and works for review to be forwarded, (carriage paid) to Dr. Ryan, 4, Charlotte-street, Bloomsbury-square.

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